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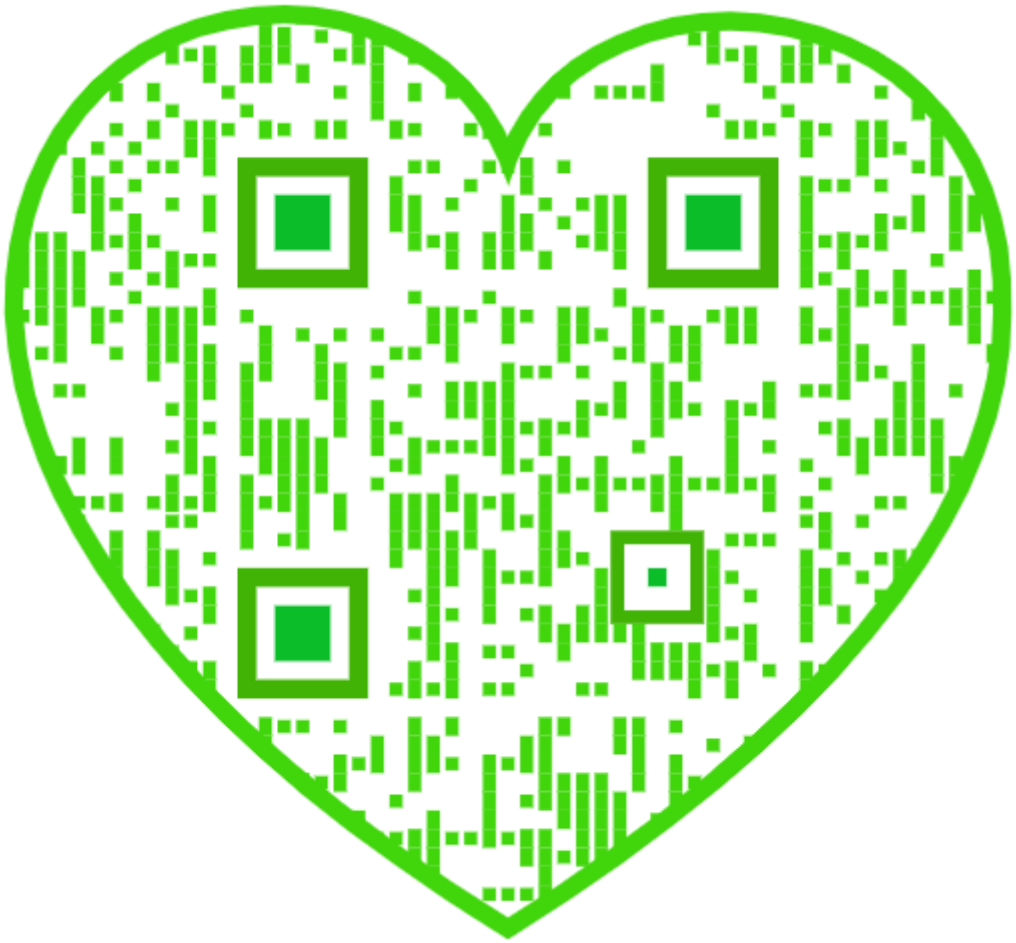

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THE
AMATEUR TRAPPER

A COMPLETE GUIDE TO THE ARTS OF TRAPPING, SNARING AND NETTING

BY

STANLEY HARDING

HOW TO CONSTRUCT DEAD-FALLS, TRAPS, SNARES, AND NETS; THE MOST SUCCESSFUL BAITS; HOW TO CURE AND TAN SKINS AND FURS AT HOME; THE ART OF TAXIDERMY FOR THE AMATEUR

WITH 50 ILLUSTRATIONS

SHREWESBURY PUBLISHING CO.
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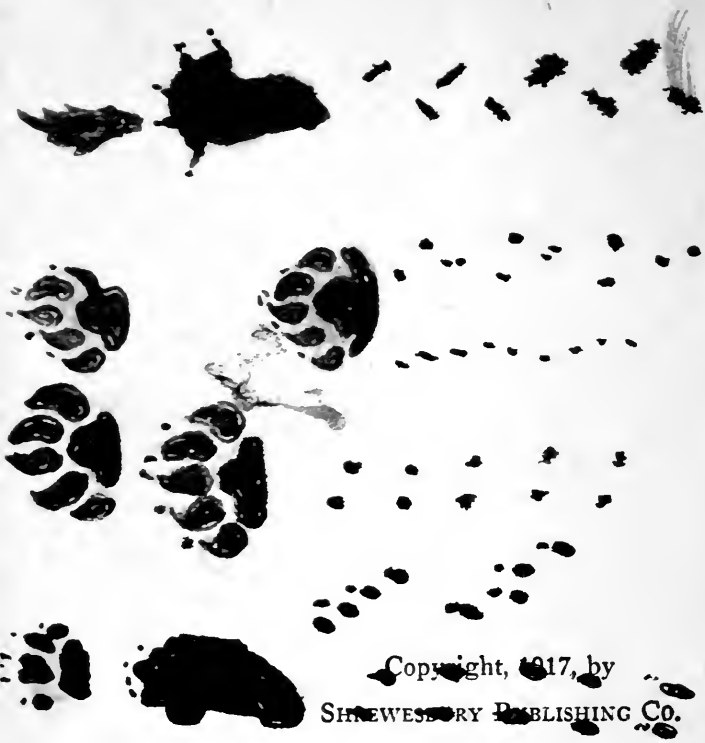

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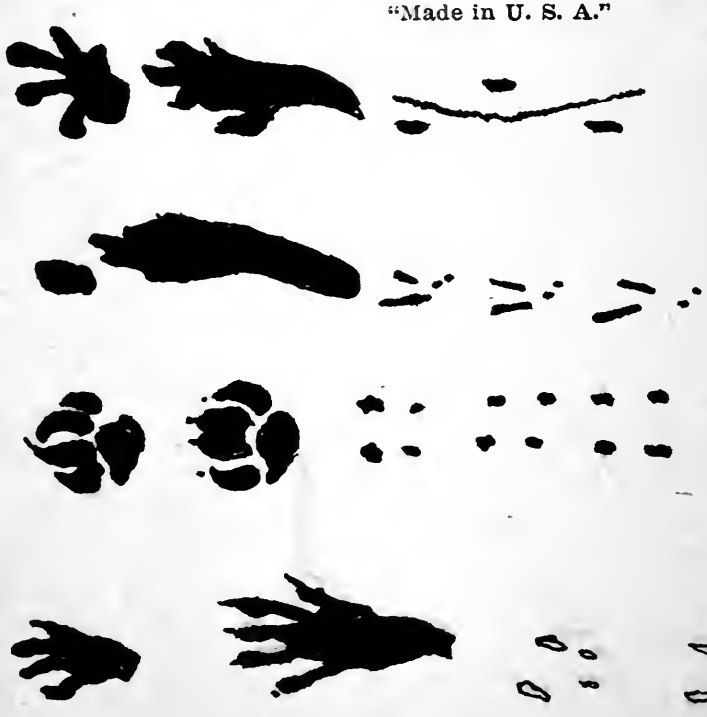


PREFACE.

The pursuit and capture of animals and birds afford an attractive employment for the leisure hours of a large proportion of the young farmers and others who reside in the small towns and villages throughout the country; and the constant inquiries after information on the subject has induced the compiler of this work to provide, in a popular form, a hand-book of instruction for the guidance of the amateur trapper.

Its scope embraces a plain description of the various traps and devices employed by those experienced in the art; the application of such devices to the practical purposes for which they are designed; and the best methods of preparing the results either for purposes of profit or for home use. By availing himself of the insight given into the nature and habits of the various animals introduced, and by following the appropriate directions furnished for capturing them, the merest tyro will, after a little practice, be enabled to become an expert in the art.

As a matter growing out of, and kindred to the subject of Trapping, there is also presented an able treatise on practical Taxidermy, giving detailed directions for preserving and stuffing specimens in an artistic and life-like manner. This article is

based on information furnished by the courtesy of two of the best professional taxidermists in this country, and may afford pleasant if not profitable employment for many a leisure hour.

In the preparation of the entire work, special attention has been given to clearness in general directions, and precision in matters of detail, and it is hoped that on this account it will meet with the unqualified approval and generous patronage of every

AMATEUR TRAPPER.

snowshoes 38 x 14 C
44 x 14
String heavy coarse
size for height of person
no x arawd frame heavy all
sides smooth rounds edges

THE AMATEUR TRAPPER.

INTRODUCTORY.

From time immemorial the chase has been accorded a prominent position among the field sports of all nations, and eagerly pursued by some for the exercise and excitement it affords, and with no other object than the coveted possession of a pair of antlers or a bushy "brush," as trophies of their prowess and skill. Others, again, have hunted wild animals for their destruction, either in self-defense or in retributive justice for their depredations; these, in order to accomplish their object the more surely, have been willing to dispense in some measure with the attractive pastime of the sportsman, and availed themselves of stratagem and device to aid in the capture of their game; but by far, perhaps, the greater number engage in hunting and trapping for the possession of fur or plumage for the sake of its intrinsic value, for personal use or future profit. The life of a trapper is full of adventure and excitement; the perfect freedom of action, the exhilarating effects of open-air exercise, the hopes of success, the fear of failure, even the dangers incurred from exposure to the pitiless storm, the attack of wild beasts, and other vicissitudes of a life in the forest

and by the stream, all combine to invest it with a charm and an attraction realized only by those who have adopted it as a vocation. It opens out a wide field of study in observing the habits and peculiarities of the birds and animals which form the objects of his pursuit. Without a deep insight into this portion of natural history, a trapper's efforts will be almost futile; his traps and snares may be faultless, both in construction and position, but they will be set in vain. Instinct, sagacity and sense of smell are so strongly developed in some animals as to amount almost to intelligence, and it requires all the knowledge and superior mental endowments that a man can call to his aid to cope with them successfully, and to be able to derive pleasure as well as profit from his undertakings.

In order to afford the amateur such information as is necessary to guide him in his first attempts, and develop him, with practice, into a successful trapper, this work has been prepared with the special design of laying before the tyro the accumulated practice and experience of the best informed trappers; he will find in the following pages a condensed but ample description of the different animals he is likely to meet with, with their habits and pursuits; the most approved methods of attracting and capturing them, and of preparing and curing their skins and fur so as to preserve them in the best marketable condition. Exceedingly clear and simple directions are also given for preparing and stuffing specimens of birds or animals, the information being derived from practical taxidermists: with receipts for making the various antiseptic substances used for preserving skins, and the most approved methods of tanning pelts and hides. Before anything like this can be done, however, it is first very essential to catch the animals, and this leads

naturally to the consideration of the traps, snares and other appliances used for this purpose. It would be of no practical use to enter into an elaborate enumeration of all the traps that were ever invented, the real object being plain and clear description of only the very best that can be required for the accomplishment of the different ends in view, and amply sufficient to cover all practical purposes and contingencies. In fact, there are comparatively few traps which bear the stamp of originality, the majority of them involving the same principles in their construction, merely modified to adapt them to circumstances, or to suit some special object.

Before entering into the subject of traps in detail, there is one remark that may not be inappropriate in regard to their use, and that is the selection, invariably, of those kinds which, while fulfilling the required purpose, are such as will cause the least pain to the animal when caught. Unfortunately the steel-trap—the one which, for its simplicity, strength and unfailing action, is the most universally adopted by trappers—has this great objection, the suffering it must inflict on the unlucky object that gets into its iron grasp. Still, it should always be borne in mind that unnecessary cruelty is inhuman; it should be avoided as far as circumstances will permit, and should never be practiced where pastime is the only object sought.

TRAPS.

Under the head of traps are included all the contrivances used for the capture of birds and animals, either by merely enclosing them, by seizing and holding them fast, or by killing them at once. They are generally classified under the names of Dead-

Falls, Mechanical-Traps, Snares, Nets, and Steel-Traps; the last mentioned being almost the only kind used by regular trappers, and those who do their work in a systematic manner and on a large scale. A few contrivances for catching rats and other small vermin have been introduced into this book, which are not, perhaps, strictly within the scope of the trapper's art, but may, nevertheless, be found very useful to the amateur, and may also enable the farmer to do much towards the extermination of the small, destructive pests that are so numerous in the field as well as the farm-yard. Some of the traps described are original, and appear in print for the first time; in others, serious defects, which detracted from their usefulness, have been corrected; and all include the latest improvements and appliances that can add to their effectiveness.

It is not always a very easy matter to describe anything that involves mechanism with sufficient clearness and terseness to render it plain and easy of comprehension; and directions for making traps and snares are frequently so wanting in precision and perspicuity, that a clear idea of their construction is by no means readily attainable; illustrations, also, instead of adding to the force of the accompanying explanations, are, too often, far more calculated to puzzle and bewilder the amateur mechanic, and discourage him in his attempts to master the subject.

In the descriptions here given, all possible effort has been made to avoid involving the young student in any such embarrassment; and it is believed and claimed that the directions laid down for constructing the various traps, are plain without the aid of illustrations; while, at the same time, the latter are generally sufficient of themselves to convey a very

intelligent idea of the traps they represent; and, consequently, the descriptions and diagrams combined, will not fail to render the whole matter as clear as daylight to the most ordinary comprehension.

The description of each trap is systematic, and arranged in natural order; commencing with the construction of each part, and its use; then the method to be followed in combining the different parts, and arranging them, each in its proper place; and, lastly, the action of the trap, and the way to bait and set it, in order that it may fulfill its purpose promptly and efficiently.

THE DEAD-FALL.

The Dead-Fall is one of the best traps for destroying as well as catching animals, particularly those whose depredations or thefts have rendered their destruction highly desirable; and which, by their misdeeds, have fully earned the just retribution of the death penalty. The fox is a most difficult fellow to trap, unless the open entrance to a hen-roost, or some such irresistible temptation, sufficient to overcome his natural prudence, is offered him; it happens, however, that even he sometimes falls a victim to the Dead-Fall, which furnishes a fitting drop-scene to close the last act of his life's adventures. In the description here given, the dimensions of the different parts are suitable for constructing a trap capable of killing foxes, and other animals of like size, or smaller. It is peculiarly successful with still larger animals; but, for such, it requires to be made of correspondingly strong materials, and of proportionately increased dimensions. One fact particularly recommends it, which is, that the materials for constructing it can all be found in the woods,

and need only an axe or hatchet, and a jack-knife to trim and fashion them into shape for use.

Preparatory to making the movable parts of the trap, construct a partial enclosure, about sixteen inches long and ten inches deep, open on one side; this is made of stakes driven into the ground, and standing about two feet high.

The fall consists of a log, say, six feet long and five or six inches in diameter, and weighted, if necessary, at one end, by attaching a stone firmly to it. (*See Fig.* 1.) Lay the log along the open side of the enclosure, close against the end stakes, with the weighted end projecting on one side of the en-

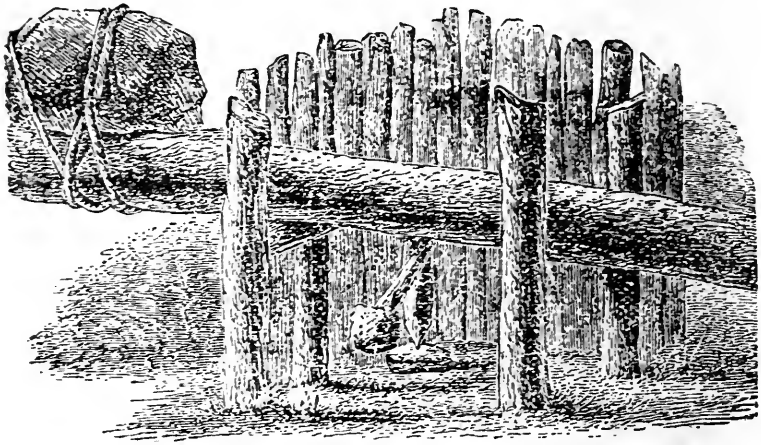


FIG. 1.

closure. Now add one more stake to each end of the enclosure, outside the log, to prevent the latter from rolling over when falling; but, at the same time, allowing the log to move freely up and down. A post, eighteen inches high, and flattened on the top, is then driven into the ground, on the front line, between the outside posts, and close against one of them. The remaining parts are: first, a

straight stick or lever, sixteen inches long, and flattened at each end; second, another stick, eighteen inces long, with a natural fork, eight inches from one end, and branching from it in a sloping direction; trim this branch off so as to be about six inches long, and pointed to receive the bait. To set the trap, raise the heavy end of the log, place one flattened end of the lever on the top of the post (*see a, Fig.* 2,) and under the log, the other end pointing inwards to the back of the enclosure; support that inner end with the forked stick, the fork pointing downwards and towards the centre of the enclosure; under the lower end of the forked stick,

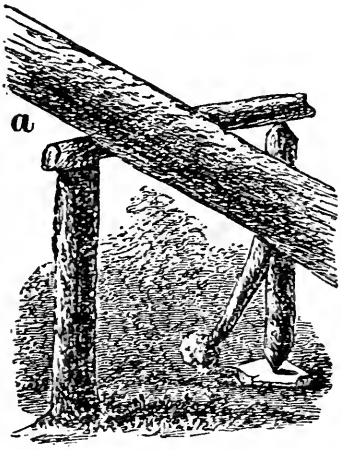


FIG. 2.

which should be pointed, put a small flat stone, to prevent it from sticking into the ground. The arrangement of the parts is plainly shown in Fig. 2. If the upper end of the forked stick is adjusted very delicately to the extreme end of the lever, the slightest disturbance of the bait will disarrange them both, letting the log fall with crushing effect on the back of the animal, whose appetite for the

bait has allured it to its ruin. There is a doubt in the minds of some, whether the fatal effect on the animal is really caused by the log; they contend that it arises from the inability on the part of the animal to "stand the press." One thing, however, is certain, and open to no quibble—the animal perishes instantly, and that's flat.

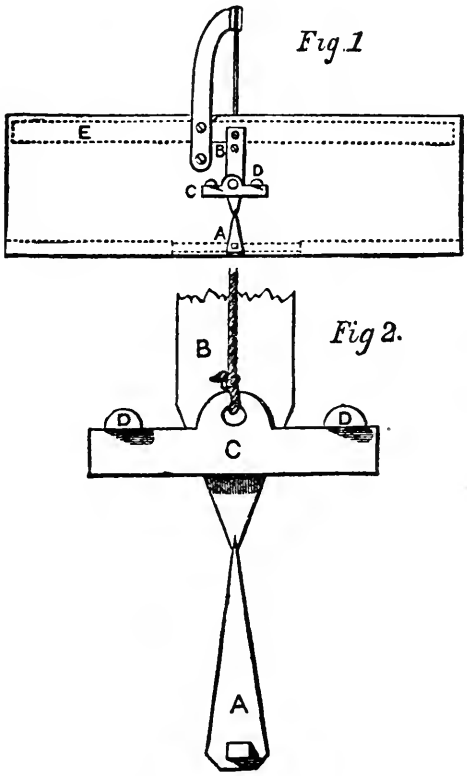
DEAD-FALL FOR SMALL ANIMALS.

Another very effective Dead-Fall, more specially suited for small animals, requires a great deal more ingenuity in its construction, but will fully repay the trouble by the certainty of its action and ready adaptability to all locations. The body of the trap must be three feet long, eleven inches high, and four inches wide (inside measurement), and the wood of which the treadle is made must be of oak, the body of the trap being pine. The treadle is one foot long and five-eighths of an inch thick. It works in the floor of the trap in an open space left for it.

It must not, however, be flush with the floor, but rather below it, or the weight of the drop will most probably break the pins on which the treadle works. These latter should be made of brass, to prevent rusting, and about as thick as a quill. They must be driven into each side of the treadle exactly in the centre. The holes in the trap on which these pins work, should be burnt with a red-hot round iron after boring, otherwise the wet weather will swell the wood and make the pins bind. On one of these pins the iron point, *A*, must be riveted. This pin must be made with a *square* end when riveted, to prevent the point *A* from turning round on it. When put into the treadle the point *A* ought to stand away from the body of the trap about one inch, and be perfectly upright.

B is a piece of bell-spring (or, better still, a piece of truss-spring,) about six inches long, and pointed at one end to meet the point *A*.

This spring must be fastened with a couple of screws to the side of the trap, with the curve or bend *outward*, and should project so far downwards that the pointed end of *A* has about an eighth inch hold on it.



C is a piece of brass or iron plate about one-sixteenth of an inch thick, with a hole in it, to which the string is tied that suspends the weight.

D D are two strong screws standing out about two inches. When screwed in with the grooves in their

heads horizontal, file away the under half of the heads as deep as the groove. A piece of half-inch bar iron, flat at one end to receive two screws, must be fixed upright in the position shown in Figure 1.

This must be made in an arched form at the top,

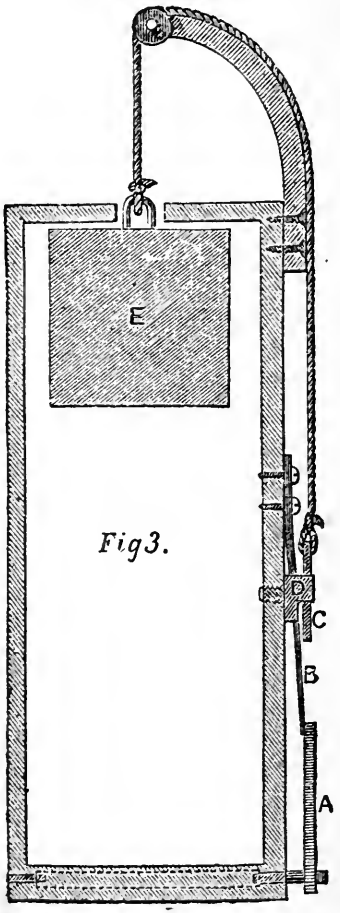


Fig3.

to stand over the centre of the trap, and a small pulley must be fixed at that end. The weight consists of a piece of wood, *E* (*Fig.* 3,) about three inches square, and two feet two inches long. A

staple is driven exactly in the centre, and a string goes from *C* to the staple.

To set the trap, press down the spring, *B*, and put it just under the point, *A;* then pass the string over the pulley, and let *C* catch across the half-grooves in the two screws, *D D*. The weight ought to hang with its top edge about even with the top of the trap. An animal running over the treadle at either end disengages the two points, and the spring flying up, strikes *C* out of the two catches, and the weight drops.

Rub the spring occasionally with mercurial ointment to resist the wet, and it will last any length of time. The string, however, being liable to decay, will of course require to be renewed occasionally.

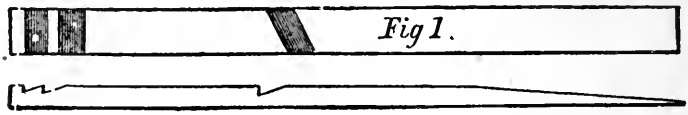
The point of the spring when the trap has gone off need not fly up more than half an inch beyond the two screw heads. This trap requires no bait, though it is as well to rub the floor with the entrails of a rabbit, or fowl.

For mink use the fish-oil (*see page* 74). Figure 1 shows a side view of the trap. Figure 3 gives an end section of the trap when set.

FIGURE-FOUR TRAP.

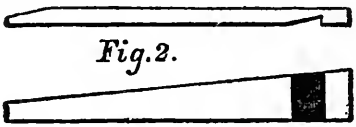
This primitive, almost ancient, kind of Dead-Fall is, after all, one of the best things to catch such animals as will not be spoiled for any after-purposes by flattening, as it catches only by crushing its victim. It consists of a flat piece of stone supported by three bits of wood; the whole trouble being in making those three bits right; and this can be done by carefully comparing the description here given with the illustrations, whenever they are referred to. The parts are all made of wood about three-eighths of an inch thick. Fig. 1 is thirteen inches long, with notches about one-sixteenth of an inch deep

cut in its upper side, two of the notches near together and at one end, and another four and a half inches distant from the first two; the latter notch



should be cut a little sloping rather than straight across the stick; Fig. 1 represents a top view, and the piece next below it a side view of the piece of wood as it should be made, the end farther from the notches being trimmed to a point to hold the bait. This constitutes the *trigger*.

The lever is shown in Fig. 2; the cut immediately above giving a side view, and that below it a bottom view, of this portion of the trap. The piece



of wood needed for it is six and one-half inches long, one inch wide at one end, and tapering down to three-eighths of an inch at the other; a notch is cut across the under side, one and a half inches from the wide end; level off the upper side of the narrow end so as to reduce the extremity to about one-half its original thickness. It should be remarked here that if the flat stone employed for the trap is a heavy one, the notch must not be more than one inch from the end; otherwise the leverage and consequent tension on the notches would be greater than is desirable, tending to hold the parts together much too rigidly.

The upright post, Fig. 3, is seven inches long, slightly forked at the bottom (to make it stand firm and prevent it from twisting round when in use),

the upper end beveled from the front backwards at an angle of about forty-five degrees. The front of the upright is the side that would face a person standing exactly opposite the trap when set. On

the right side cut a long notch, half the width of the wood in depth, commencing the hollow slope of the notch one inch from the lower end, and making the square shoulder just three inches from the bottom of the post; level the shoulder off from the front so as to leave only a narrow edge. The parts are now ready for setting. Place the post

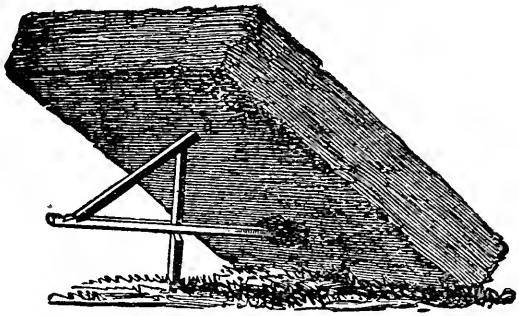


FIG. 4.

upright (*see Fig.* 4,) its forked end standing on a small piece of wood or flat stone, to prevent it from sinking into the ground; bait the pointed end of the trigger, and hold it up horizontally with its middle notch catching behind the shoulder of the notch in the upright post; then insert the beveled end of the lever in the notch at the end of the trigger, the notch in the lever laying on the edge of the top of the upright post. Lastly, make the stone rest on the top end of the lever, arranging the posi-

tion of the stone so that the bait will be near the lower end of the stone. If properly and carefully adjusted, the parts of the trap will be held firmly together by the weight of the stone; and yet the slightest interference with the bait will, by the displacement of the trigger, deprive the stone of any support, which therefore falls instantly.

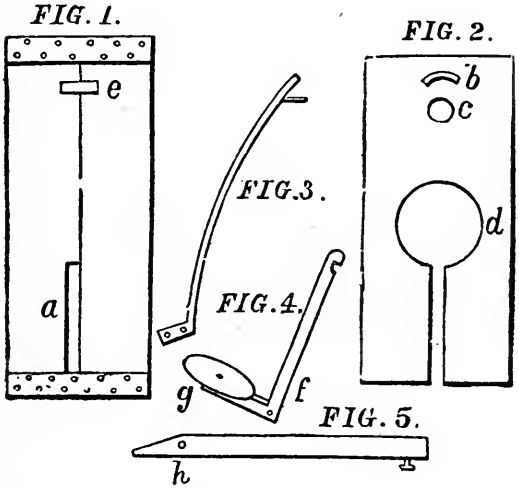
It is a good plan to hollow the ground out somewhat underneath where the stone falls, to allow space for the dismantled pieces of the figure-four to lay without danger of being broken.

The bait, also, should be something that will flatten easily, and not hard enough to tilt the stone up after it has fallen. The three pieces which constitute the figure-four may be used as a support for any trap which catches by falling down, such as a box, coop, sieve, &c.

TREADLE TRAP FOR SMALL ANIMALS.

This will be found a most excellent trap. It should be made of the commonest outside boards of pine, and be stained, not painted, so that it may not be at all conspicuous. Fig. 1 is the floor of the trap, twenty-two inches long, fourteen inches wide, and three-quarters inch thick. It must be made in two pieces, so as to admit of the treadle or trigger being screwed onto the edge of one of the boards, which must then be nailed together with two battens two inches wide, and half an inch thick. A strip is cut out six inches long and half an inch wide at *a*, and the heel of the trigger works in the opening, and is screwed through the hole at *f* (*see Fig.* 4,) onto the edge at *a* (*see Fig.* 1). Fig. 2 is the lid, which should be made solid or in two pieces like Fig. 1, but two inches shorter; *b* is a staple to receive the end of the lever; *c* is a hole to allow the iron stanchion (*Fig.* 3) to pass through without graz-

ing; *d* is a hole three inches in diameter, with its centre four and a half inches from the hinge end of the lid. An oblong piece is cut out from this hole to the hinge end half an inch wide, so as to allow



the neck of the trigger to work freely. The hinges may be made of pieces of old stirrup leather.

Fig. 3 is an iron stanchion made of half-inch round iron, flattened at the foot, and having two holes for screws. It must be bent to a radius of fifteen inches. Half an inch from the other end it must have a pin riveted in, about the thickness of a quill, standing out at right angles, and about three-quarters of an inch long. The stanchion is screwed onto the floor at *e*.

Fig. 4 is the trigger and plate. From notch to *f* is four and a half inches; from *f* to *g*, three inches. The plate is a piece of round sheet iron, three and a half inches in diameter, with a hole in it, to be riveted to the trigger.

Fig. 5 is a wooden lever three-quarters of an inch wide and half an inch thick, to reach from the top of

the trigger, when set, to the staple, *b*, in Fig. 2. Two inches from the end, as at *h*, is a hole to receive the pin in the top of the stanchion, and at the other end a lath-nail to catch the notch in Fig. 4.

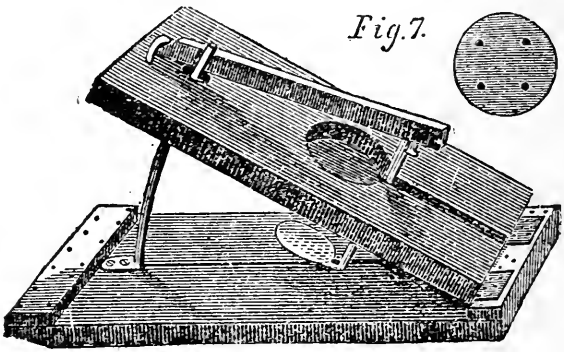


FIG. 6.

Fig. 6 is the trap when set.

Fig. 7 is a round piece of sheet iron four inches in diameter, with four holes punched in to tie the bait on. To set the trap, put the lever on to the iron stanchion, raise the lid till the end of the lever catches under the staple, press the other end down, and let the nail catch the notch in the top of the trigger, and weight the lid with stones. Having tied the bait on Fig. 7, merely place it on the hole *d*, with the bait downwards, but not too low. The animal reaching up to smell at it, lets the trap off by setting its feet on the trigger plate, and is crushed by the falling lid.

THE HARROW TRAP.

A trap, useful for its catch-and-hold-fast qualities, combined with simplicity of action, furnishes the subject for the accompanying illustration; a description of the latter will be the best guide for the construction of the trap.

The exterior portion consists of an oblong box without lid, from which one end has been taken out, and rather deeper than it is wide. The box shown

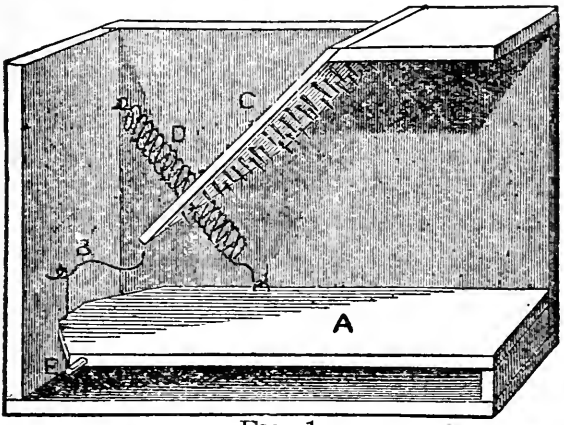
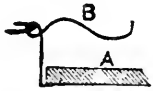


FIG. 1.

in the engraving has been temporarily deprived of one of its sides in order to afford a plain view of the interior arrangements. A false bottom, *A*, is made to fit loosely in the box; a hole is bored through each side of the box, near the end and as far above the inside level of the true bottom as it is distant from the end, as seen at *E;* through these holes pieces of stout wire are driven into the edges of the false bottom, forming pivots on which it hinges, the false bottom having first been so adjusted as to leave an inch space between it and the end of the box.

Next provide a piece of board, the same width as the inside of the box, and long enough to reach, in a sloping direction, two-thirds of the depth of the box; through the board drive nails or pointed wires to project like the teeth of a harrow. Lift the bottom up till the end touches the lid; in this position use the upper side of the bottom as a ruler to mark

a line on the inside of each side of the box; fasten the harrow permanently, in a position parallel to and about an inch distant from the ruled lines. One end of a strong spiral spring, *D*, is attached to the side of the box, the other end being secured to the upper side of the movable bottom. This spring must be arranged so as not to interfere with the harrow when the bottom is raised up. In its present state the bottom would always remain ele-



vated; to keep it down in its place a catch, *B*, is fastened by a staple to the inside of the box. The catch consists of a piece of wire, stout enough to remain in shape when in use, and bent in the manner shown in Fig. 2, the upper branch being employed for holding the bait; the lower end being bent at right angles to catch underneath the end of the movable bottom and sustain it in a horizontal position. It will be seen that a very slight pull on the bait will set the catch free, but have a very opposite effect on any animal that may be on the platform, which is instantly drawn up by the spring against the spikes above, helplessly impaling the rash but unfortunate intruder.

The size of the trap and the strength of the materials should be adapted to the purpose for which it is intended. This is a very effective trap, and has only one objection, common to all traps which catch and hold fast—that of cruelty to the animal caught.

THE BOX PIT-FALL.

The advantages of this trap consist in its simplicity of construction, its never missing, and the fact of its always keeping itself set for use.

It consists of a box without any lid, a foot square, and eighteen inches deep, or the deeper the better. Procure a sheet of tin just large enough to fit easily inside the box; scratch a straight line, *a*, Fig. 1, exactly across the centre, and terminating in the middle points of two opposite sides; at each end of the line solder a loop of tin as seen at *b*, Fig. 2; over the middle of the line, and at right angles across it, solder or rivet a strip of tin in the form of a

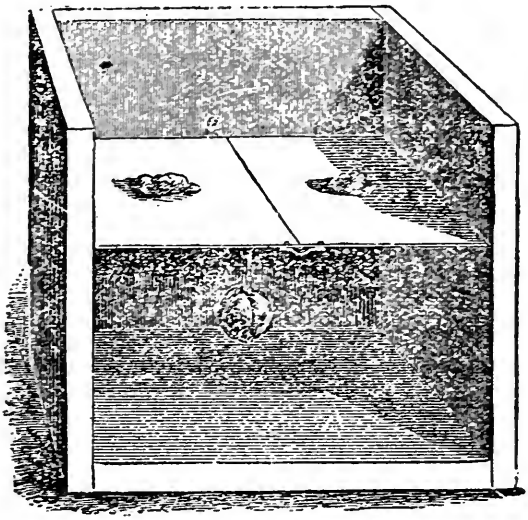


FIG. 1.

loop, extending an inch and a half on each side of the line, and bagging or arching out about two inches. In the centre of the loop, bore a hole, through which pass a string with a weight attached, to hang down three or four inches, as seen at *a*, in Fig. 2. The weight must be just enough to serve as a counterpoise to keep the tin in a horizontal position. The tin is then fastened inside the box, so as to form a platform about three inches below the top edge of the box. This is done by driving

two pieces of stout wire, one through each side of the box, so as to pass through the small loops which were soldered onto the edges of the tin; these pivots form the only support of the tin platform, which swings freely on them, the weight of a small mouse jumping onto it being sufficient to tilt the platform, and let the mouse drop down into the box. As soon as the tin is relieved of the weight of the mouse, the counterpoise brings it again to a level position. The bait is placed on each side of the tin, and

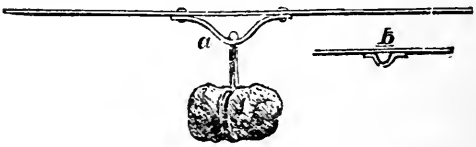


FIG. 2.

fastened by a string passing through holes in the tin made for that purpose. Without this precaution the bait would fall off the first time it was disturbed. The box should be sunk into the ground with its upper edges level with the surface, in a favorable location, and may be made a permanent institution in barns or other places infested with small vermin of any kind; in this case, however, it would perhaps be advisable to line the lower portion of the box with tin or sheet iron, to prevent the escape of such animals as have enterprise and teeth enough to work their passage through the sides.

THE RABBIT TRAP.

There is one great disadvantage in some of the most ingenious and successful traps, which is that they are frequently so intricate in their details, that they are by no means easy to construct, and still more difficult to describe with any degree of accuracy or precision. The old fashioned rabbit trap

is very free from any drawback of this nature, and the rabbit who mistakes its interior for a private dining-room, will also find that there is no draw-

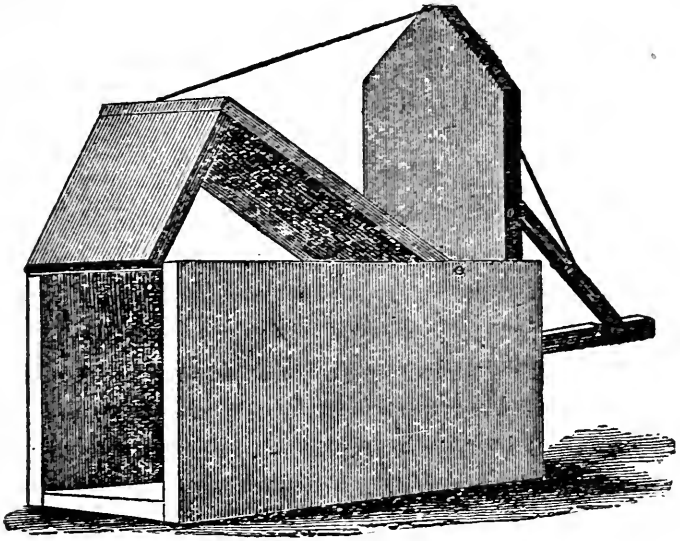


FIG. 1.

back at all in it worth mentioning. Although this trap derives its name from being the one usually employed for rabbits, there are very few animals that this trap will not catch, provided they are not very small. The construction of the box which forms the trap is the first thing to be explained; the material had better be tolerably hard wood, about three-quarters inch in thickness, and properly seasoned to prevent shrinking. The two side-pieces of the box should each be twenty-one inches long and nine inches wide; the bottom is the same length as the side-pieces, and seven inches wide; the end-piece for the back of the trap is eighteen inches high and seven inches wide, the upper part beveled almost to a point; this form is not absolutely neces-

sary, but gives a neater appearance to the trap. Nail the side-pieces against the edges of the bottom; set the back-piece upright in the end, and nail it fast through the sides and bottom. The movable lid consists of two parts; the lid itself twenty inches long and seven inches wide, and the end-piece eight and a quarter inches long and seven wide; nail the end of the lid onto the top edge of the end-piece, and plane off the edges of the lid and flap, to allow the whole to work freely inside the box.

Bore a hole through each of the side-pieces, four inches from the tall end, and three-eighths of an inch from the upper edge. Through each of these holes drive a piece of stout wire (two inches long, pointed at one end), one into each edge of the lid; these serve for hinges on which the lid works. This completes the box part of the trap. To make it effective, first bore a hole through the tall end-piece, four inches above the bottom, and two and a half inches from the right side of the box, making the hole just large enough to admit freely a round stick of wood, about the thickness of an ordinary lead pencil, this last to be four inches long, to be used as a bait-stick; provide another strip of wood for a string-piece, six inches long, and somewhat thicker than the bait-stick; next fasten the end of a piece of strong cord (whip-cord, for instance), to the middle point of the extreme edge of the lid; cut a nick in the top point of the tall end-piece, pass the string over the nick, and down the back of the end-piece (as seen at *A*, Fig. 2); tie this end of the cord to the string-piece, two inches from its end, adjusting the length of the string in such manner that, when the lid of the box is down, the string-piece to which the cord is attached will hang down on the back of the end-piece ten inches above the bottom of the box. At a point on the back, two

inches distant from the left side and four inches above the bottom, drive in a nail or screw, so that the head will project, say half an inch. To set the trap, put the bait on the end of the bait-stick, insert

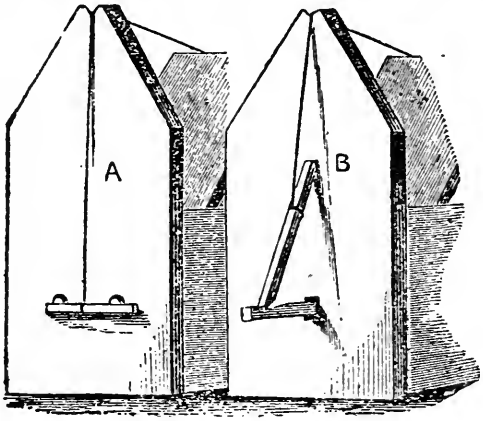


FIG. 2.

the other end of the bait-stick from inside the box, into the hole, allowing it to project outside the back about half an inch; then pull the string-piece down, slip the shorter end under the nail, and let the other longer end catch slightly but securely underneath the projecting end of the bait-stick. The lid of the trap will be found to have been raised six inches, affording free ingress to any animals passing by; the first one that ventures to meddle with the bait will set the string-piece free, down comes the lid, enclosing the prisoner effectually in the box. There is another plan for setting the trap, as shown at *B*, Fig. 2: in this case the bait-stick needs to be eight inches long, with a notch cut near the end, and made to project four inches outside the box. The string-piece, pointed at both ends, is secured, the long end in the notch on the bait-stick, the other short end in a nick cut in the side of the

box, directly above. This last mentioned method is inferior to the plan first described; as, from the nature of the arrangements, the bait-stick is held too firmly, and is apt to allow of considerable interference with the bait before the parts become set free. As an additional improvement, a stout piece of glass might be inserted in a corresponding aperture cut in the middle of the lid; not for the benefit of the captured animal, but to allow of the animal being seen before opening the trap. As the comfort of the animal has been alluded to, a few small auger holes bored in the sides of the box, high up, will afford a supply of fresh air, and make its captivity less harassing.

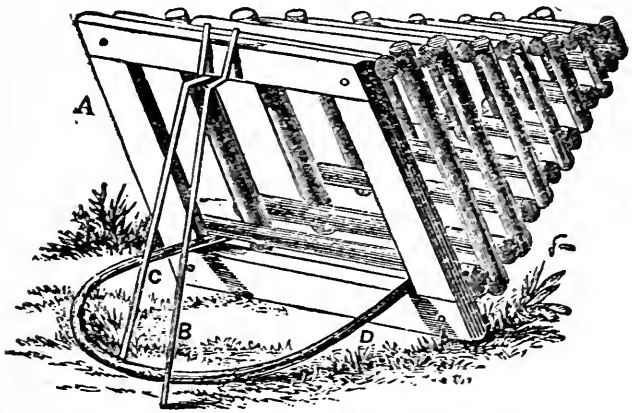
THE COOP TRAP.

A trap, capable of catching any bird that feels itself growing thinner for want of a dinner, can be made with the exercise of a little ingenuity and an ordinary coop.

There is at least one great advantage in the use of this kind of trap; it is very effective in catching the bird, and also furnishes it, when caught, with a safe and airy enclosure, in which it can enjoy a fair meal without fear of intrusion or interruption, and where it can chuckle at the disappointment of the other poor birds shut out from like privileges.

Supposing a coop to be ready at hand, procure a thin strip of rattan, or a flexible piece of willow; its length should be such that, when bent into a semi-circular arch, the height of the arch will be a little more than half the diameter of the coop. Through each end of the rattan, burn a hole with a piece of hot wire; nail the ends onto the inner edge of one side of the coop in such position that all parts of the curved rattan are well inside the

opening of the coop; also using nails that fit loosely through the holes, and allow the rattan some freedom of motion; next get a straight stick, *B*, with a fork at one end, and long enough, exclusive of the fork, to support one side of the coop when tilted up at an angle of about thirty degrees; another



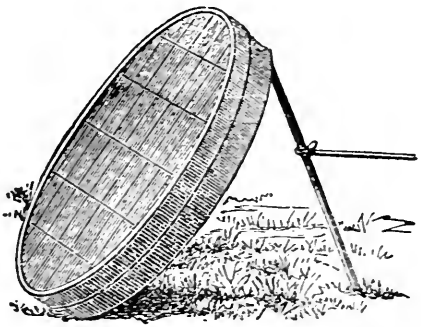
one end, as shown at *C*. The straight part of this stick should be one inch less than the straight part of the forked stick, *B*. To set the trap, raise up one side of the coop to the height of the fork of the stick, *B;* insert the crook of *C* through the fork and underneath the edge of the coop, forming a catch on which the side of the coop rests; press the lower end of *C* back, inside the rattan hoop, and lift the latter from the ground just high enough to catch and hold the end of the stick, *C*. Lastly, strew some appropriate bait on the ground inside the hoop. An examination of the engraving will show plainly that when a bird hops onto the rattan, the suspended hoop will fall to the ground, releasing the end of the stick, *C;* the coop, thus deprived of its only support, will immediately fall and enclose the bird.

In case it should be desired to make a coop trap, and there is no coop readily to be obtained, a good substitute can be arranged without much trouble. The engraving here given represents a coop trap made with one of these substitutes, and this is the way to set about it: Nail four pieces of wood together to form a square frame; at each corner fasten firmly a piece of strong cord about three feet long, lay the frame on the ground with the cords gathered inside it. Next collect a sufficient number of sticks or twigs, as nearly the same thickness as possible, and as long as the side of the frame; commence by laying two sticks, one along each of two opposite sides of the frame, across their ends lay two more sticks, forming a square with the first two; across the ends of the last two place two more parallel with the first two, but not quite so far asunder; continue alternate layers of two sticks each, laid gradually closer together, causing the enclosed space to assume the shape of a square pyramid. When near the top, reach inside with the arm, and draw the cords up carefully so that one of the cords will lay along each inside corner of the pyramid. Holding the four ends together loosely over the top opening, continue the building of the sides until the opening is only four or five inches square. Then get a square piece of inch board a trifle larger than the aperture; bore a hole in the middle, large enough to hold the four cords easily; draw the ends of the cords through the hole, lay the board with its cross-grain ends across the top pair of sticks; draw the cords and tie them as tight as possible over a peg of hard wood four inches long. By means of the peg, the cords can be further tightened by twisting them, if they should at any time become slackened, the peg being secured behind a nail driven in the board, to prevent un-

twisting. Lastly, trim off the projecting ends of the sticks, and the result will be a firmly constructed coop, that can be used as a trap or for any other purposes to which a regular coop may be applied.

THE SIEVE TRAP.

This is one of the traps that involves more patience in its use than ingenuity in its construction. It consists of a sieve tilted up on its edge, and kept in that position by a thin stick or rod of



the length requisite for the purpose, depending entirely on the size of the sieve. Strew bread-crumbs, seed, or any appropriate bait underneath the sieve; tie a thin twine to the middle of the stick; and retire to a convenient place out of sight with the other end of the twine. This is the time when patience comes into requisition; a bird is sure to get under the sieve some time or other, when by a pull on the string the sieve falls down, covering up the bird, and patience is rewarded—more or less, according to the kind of bird caught.

THE BRICK TRAP.

The trap just described is undoubtedly a very old one, but there are no means of finding out the exact era in which it was first employed.

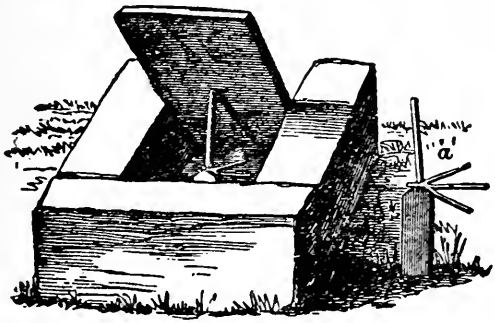
There is another device for catching birds, that has probably existed ever since the invention of bricks; and as there is ample evidence that some of the Egyptians, who lived no end of years B. C., were wholesale manufacturers of bricks, it is fair to conclude that it may, possibly at least, be of Egyptian origin.

This view is further corroborated by the frequent recurrence of a three-pronged sign, very similar in appearance to the trigger of the Brick-Trap, in the Egyptian inscriptions, still extant, written in the "hieroglyphics of the period." Be this as it may, there is no doubt of its excellence for trapping small birds, as it has stood the test more than long enough to establish the fact.

The necessary articles for its construction are first, three bricks; next a flat slab of stone, wood, or other material obtainable; in default of all these, another brick will answer the purpose almost as well, except that, on account of its weight, the trap is perhaps less easily sprung.

Drive into the ground a peg standing three inches high, its top being trimmed so as to leave a very small flat surface; procure a small twig with two forks branching out, one on each side; cut the twig and forks equally about three inches long, leaving a short butt half an inch long at the junction of the forks, and cut the sides of the butt flat above and below. The front brick is laid on its edge one inch in front of the peg; the two other bricks are then placed, also on edge, parallel to one another, so as to enclose a space behind the front brick, the

width of the space being just the width of the flat stone or lid. Then lay one end of the flat stone on the ground, between the side bricks, the front



end just resting on the inner edge of the front brick. To set the trap, lift up the front end of the lid; lay the flat butt end of the twig on the top of the peg, the prongs pointing backwards over the enclosure; on the top of the butt, place upright another straight piece of twig, just long enough to support the lid in such a position as to admit a bird easily into the interior of the trap. The adjustment of the parts is given in an illustration, *a*, showing the peg, &c., without the bricks. Strew some bread-crumbs or seeds inside the trap, and as soon as a bird, attracted by the bait, hops onto the edge of the trap, and thence onto the forked branches of the trigger, its weight will throw the upright twig off the top of the peg, and the lid falls down, enclosing the bird in the trap.

THE CROW TRAP.

The contrivance used for this purpose has about the same claim to be termed a trap, as the addition of a French roof would have to be called building a house. It is, in fact, a method of ornamenting a

bird, and by its own voluntary act, with a roof which completely covers its head, and sticks to it closer than a mutual friend. It is peculiarly adapted for young crows just beginning to forage on their own account. These birds are, from their extreme youth upwards, exceedingly shy, if not cunning, and are rarely induced to "step into the parlor" of a regular trap; but, as they are very partial to the bugs and worms brought to the surface of earth just newly ploughed, they can be met on their own ground in the following manner:—Construct a number of small cones of stiff paper, large enough to receive the head of a young crow, smear the inside of the larger end with bird-lime (*see page* 40), place them point downwards in the newly turned earth, just firmly enough to prevent the wind from disturbing them; drop a grub worm or bit of meat into each, and retire out of sight. The crow, always on the alert for just such food, in attempting to pick up the bait with its beak, also picks up the cone, which adheres firmly to its head, shutting out all power of vision and frequently of respiration; the bird becomes, in a moment, so thoroughly bewildered that it can be approached and caught easily in the hand.

The utility of catching crows early in the season may be open to some question, as they tend to rid the ground of not only destructive worms, but the grubs which, later in the season, develop into prolific insect egg-producers. Allowing all this to be greatly to their credit, if they would only confine themselves strictly to that line of feeding, it would be very short-sighted to destroy them; but the havoc they make with newly planted seeds is generally quite, if not more than enough to overbalance their efforts in the right direction.

THE BARREL TRAP FOR RATS.

A serious objection to many of the different traps usually employed for catching rats is that each trap will catch only one rat at a time; a great improvement in this respect may be made without much trouble, and at very small outlay, and furnishes the means of catching them by wholesale. Procure a barrel which is water-tight, at least at the lower part; place a lump of stone or rock in the bottom, and pour in sufficient water to nearly cover the rock, leaving only enough of it bare to allow of a resting-place for a single rat. Instead of the head, stretch a piece of very thick paper over the top of the barrel, and fasten it securely by means of a cord passed around the outside of the barrel, just below the upper hoops; damp the paper slightly with a moist sponge, and it will become tight when dry. On the paper strew cheese parings, etc., several days in succession, so as to get the rats accustomed to come there for their regular rations without fear or suspicion. As soon as the rats appear to have got sufficient confidence to come regularly to supper, cut a cross in the middle of the paper, and spread the feast as before.

The first rat that comes will drop through into the water, and soon establish his headquarters on the limited dry spot of rock prepared for his accommodation. The next candidate for a free lunch also gets a drop too much; and, obeying the natural law of self-preservation, tries to win a footing on the dry part of the rock; the fact of its being of limited size, and, moreover, already occupied, does not deter him in the least; he sees only room for one, and in his estimation that means "number one." Unfortunately for the new comer, the first rat labors under the same opinion, and the two proceed to argue the

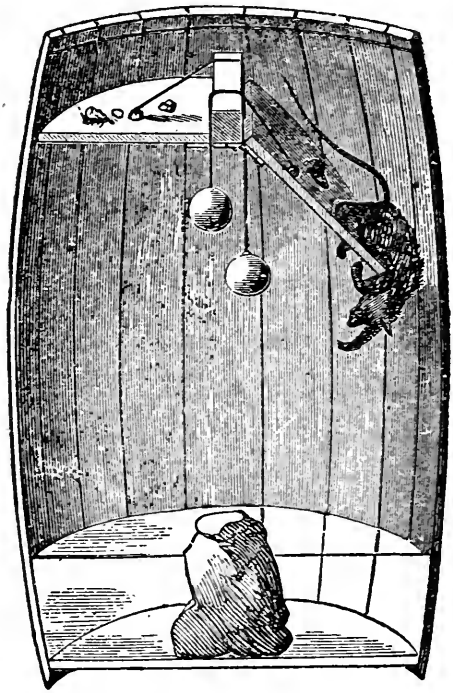
point with such determination that all the rats in the immediate neighborhood hasten to see and judge for themselves of the cause for the disturbance. It is scarcely necessary to add that they all find out very conclusively what was the matter, and to the entire satisfaction of the owner of the barrel.

The use of paper as a cover for the barrel, though thoroughly effective, will only answer for temporary purposes, as the middle corners of the paper will soon become permanently depressed; if, however, greater durability is desired, the paper may be replaced by more substantial material.

A sectional plan is here given of an arrangement for this purpose, which is easily made, and will last for a long time in good working order. The illus-

tration represents a barrel, cut in half longways, in order to show the manner in which the lid is constructed.

The lid consists of a circular piece of thin wood, a little less in diameter than the open end of the barrel, so that, when it is fixed in its place, there



will be about half an inch free space all round it to ensure perfect freedom in its action.

A bar of wood, an inch and a half or two inches square, is made just long enough to fit exactly across the middle of the open end of the barrel.

Now, take the lid, lay the bar across its center, and mark off the width of the bar across the exact middle of the lid; saw this strip out, and the lid will then consist of two leaves or flaps, which, when hinged

onto the under side of the bar, will be just the size of the original lid. On the upper side, and about the middle point of each flap, a cord is fastened, either to an eyelet placed there for the purpose, or by passing the end of the cord through a hole in the lid, and secured underneath by a knot. The cords are passed over the bar, and hang down into the barrel, a notch being cut in the back edge of each flap, to allow the cords to work freely. A weight is then fastened to the loose end of each cord, sufficiently heavy to keep the flap to which it is attached in a horizontal position, but not heavy enough to prevent a very light pressure on the flap from depressing it easily.

The bar is lastly nailed in its place in the barrel, which should be so that the lid is about four or five inches down below the top edge of the barrel, and the lid is ready for action. The hinges and cords must work very freely; thin catgut suggests itself as a desirable material to ensure smooth and durable cords; and strips of bright tin tacked on the bar under the cords would probably add to their freedom of action.

As this trap sets itself, the bait must be fastened on the top of the flaps, to prevent it from falling off; much bait is not needed, as the rat has rarely time for more than a hurried smell of it, before his attention is taken up by other and more pressing business.

Another method, perhaps still simpler, of constructing a self-adjusting lid, is as follows: Provide a circular lid, a little smaller than the open end of the barrel; exactly in the center insert a small stick perpendicularly, say six or eight inches long; at the end of the stick fix a weight, just sufficient to act as a counterpoise to keep the lid level; a potato stuck on the end of the stick will probably be sufficient for the purpose. Then bore a hole on each

side of the barrel, about four inches from the top, the two holes exactly opposite one another; through each of them drive a short wire into the edge of the lid, and the swing-lid is complete and ready to receive the bait, and also all the rats that are enterprising enough to try and carry away the attractive morsel.

BIRD-LIME.

This is a preparation used for catching small birds, without the use of any trap. The substance is smeared on sticks, or on the places where birds are expected to perch; and as soon as they alight on it, they adhere so firmly that they cannot release themselves. It can be purchased, ready for use, at any of the bird-stores, etc. Anything that is very sticky will answer the purpose, provided it does not dry and harden too quickly. Common linseed oil, boiled until it is thick, makes very good bird-lime. Any kind of varnish, made from copal, mastich, or other gums (but containing no alcohol), and allowed to thicken by exposure, is also a very good article for the purpose. A mixture of the thick oil and varnish together would probably retain its sticky qualities for a longer time than either alone.

The imported bird-lime is made from the green inner bark of the holly, peeled in the month of June. The bark is boiled in water until the inner bark separates from the grey outer bark; the first-mentioned green portion is then laid on the flagstone in an out-house, and covered with rushes. In about two weeks it becomes slimy, and is then pounded in a mortar with a few grains of wheat, and put away in a jar. When required for use, a portion may be melted over the fire with a little goose-grease.

As the holly is not very abundant in this country,

a good, serviceable bird-lime may be prepared from slippery-elm bark. It is best to gather the bark early in the season; it is cut into small pieces, well bruised, and boiled until soft, in just enough water to cover it. After a thorough pounding in a mortar, with the addition of a few grains of wheat or rye, it can be put in a jar and kept well covered. When required for use, a small portion should be put in a pan on the fire to soften it, and mixed with linseed oil or goose-grease, sufficient to give a proper consistence to the mixture. When birds are to be caught for the purpose of preserving and stuffing them, this preparation is undoubtedly preferable to thick oil or varnish, as these latter are not easily removed from the feathers of the bird.

THE GARROTE TRAP.

The illustration given in Fig. 1 gives a very correct view of this trap when set and ready for use. Provide two stout switches about thirty inches long, sharpen them at both ends, bend one of them into the form of an arch and plant it firmly in the ground; bend the other one into the same form and plant it by the side of the first one, leaving about an inch clear between them. Cut a number of stakes, plant them in the ground so as to make a circular fence, of which the second arch forms a part, enclosing a space about a foot in diameter, to which the only entrance is through the arches. Drive a notched peg into the ground at the back of the enclosure, opposite the center of the arch; cut a piece of twig a little longer than the height of the arch; this twig should have a short, natural fork sloping away from its side, to which the bait is fastened; at the lower end of the twig and on the side opposite to the fork, cut a notch to fit into the notch in the peg that has

been driven in the ground; hold the twig upright, and on the forked side, at a level with the top of the arch, cut another notch. Next get a hooked stick, shaped like *a* in Fig. 2, just long enough to reach from the outer arch back to the upright twig.

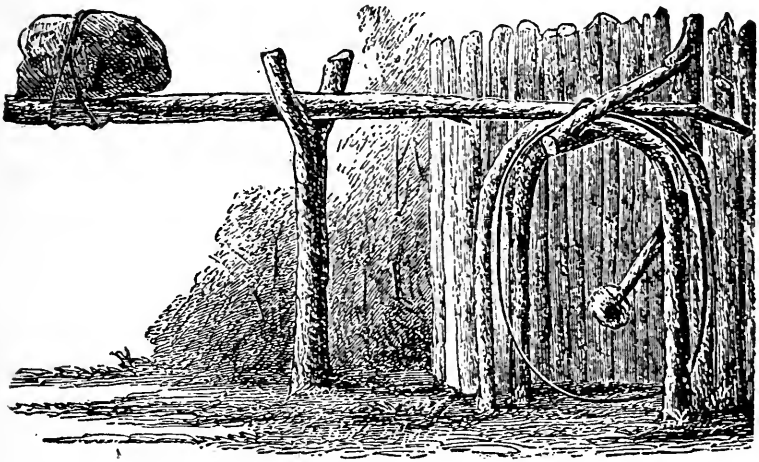


FIG. 1.

On a line with the arches, and three feet distant from them, drive into the ground a crotched stick, in such manner that the crotch is level with the top of the arches. Get a stiff pole some six feet long, weighted at one end with a heavy stone firmly tied to it; at the other end of the pole fasten a loop of cord or fine wire in the shape of a U, the same width and height as the entrance under the arch.

To set this trap, lay the pole across the crotch, adjusting it so that the loop hangs *exactly between the arches;* place the hook of the stick, *a*, under the top of the front arch (see Fig. 2), the remainder of the stick extending over the pole and back into the enclosure; catch the end of it in the upper notch of the upright twig, and secure this last by its lower notch to the notch in the peg which has been driven

in the ground; let the fork which holds the bait point a little sideways from, rather than towards the entrance of the arch, as it will make the springing

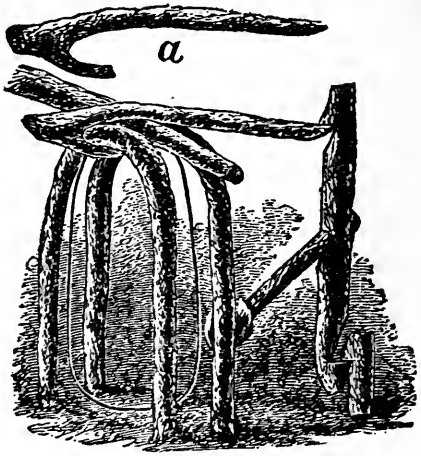


FIG. 2.

of the trap more certain. Any animal that goes for the bait must first pass partly through the arches; as soon as it seizes the bait the upright twig becomes displaced, the hooked stick is thus set free, and the loop hoists the animal up by its hind-quarters, and holds it firmly caught against the top of the arches.

This is an excellent snare for rabbits, raccoons, and other animals of like size.

DOUBLE-BOX GARROTE TRAP.

The accompanying illustration represents a useful and easily constructed trap for catching minks, muskrats and any other small animals. It consists of a box about a foot long (see Fig. 1) open at both ends, and large enough to allow any of the above mentioned animals to pass through easily. About two inches from each end, saw a groove across and

right through the thickness of the top of the box; this forms a slit at each end through which the loops hang. These loops are made of stout wire,

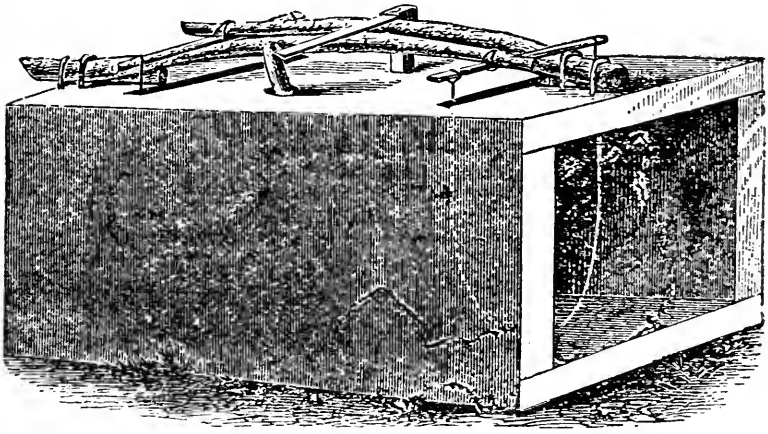


FIG. 1.

bent to conform somewhat to the inside shape and size of the box, the ends of each loop projecting upwards through the slit, and fastened firmly into the ends of a cross-bar of hard wood, such as a strip of hickory, which we will call the loop-piece. The springs, which are required to draw up the loops, are made of hickory, tapering, and as strong as compatible with the necessary flexibility; the construction and arrangement of these springs are seen in Fig. 2. The butt end of the hickory spring is fastened down near the end of the top of the box, *f f*, by wires, *b b*, passing through holes bored in the box; the thinner end being considerably elevated by a block, *h*, placed as seen in the diagram.

This diagram represents the arrangements for one loop only, in order to make it plainer; it must, therefore, be remembered that the spring of the other loop will have its butt underneath the loop-

piece of this one, and the two springs lay side by side, ends reversed.

The spring having been fastened at the butt end,

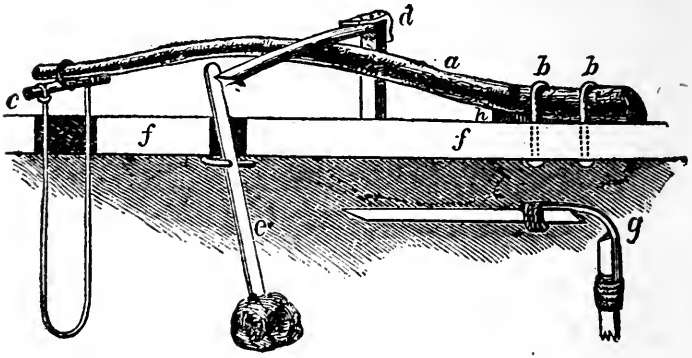


FIG. 2.

the other thinner end is firmly fastened to the loop-piece to which it belongs, at *c*. Midway between the grooves, and about an inch from the side of the spring, bore a hole in the top of the box, *f f*, through which a piece of wood, *e*, passes; this is long enough to hang about three inches down in the box, to hold the bait, and project upwards two inches; a strong peg is passed through it just at the inside line of the top of the box; this is to hold it down when in use. On the side of the projecting part cut a notch. Next take two strips of wood; hinge them together with a strap of leather, as seen at *g*. Nail the upright strip to the side of the box, as shown at *d;* trim the top strip or lever just to reach the notch in the stick, beveling the end of it, to make it catch slightly but firmly in the notch.

The other spring is made and fixed in the same manner, and connected with the loop-piece to which it belongs.

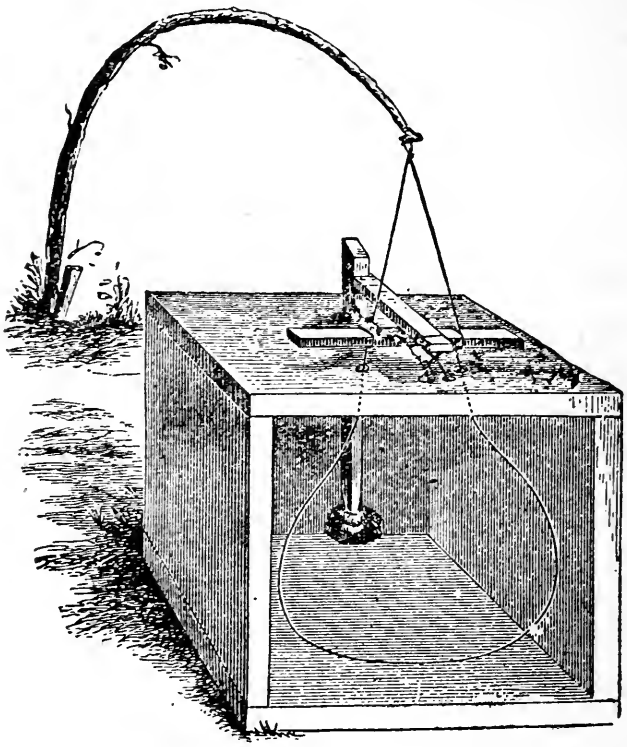
To set the trap, the springs are pressed down, and kept so by bringing the hinged lever over them,

securing the end of the lever in the notch of the bait-stick, the whole arrangement being clearly shown in Fig. 1. Now any animal entering the box, by either end, will have to place his body in the loop in order to get the bait; a very slight nibbling at the bait will set the lever free from its notch, and both loops spring upwards with a snap, the animal being held firmly against the top of the box by the loop in which it was standing.

SINGLE-BOX GARROTE TRAP.

This trap consists of a box a foot in height and width, and eighteen inches long, open at one end. Cut a hole through the top of the box five inches from the closed end; a stick of wood is made to hang loosely through the hole, extending nine inches downwards into the interior of the box, and projecting three inches above the top; being secured in this position by two pins or pegs driven through the stick, one underneath, and the other outside the top of the box; a small distance should be left between the upper cross peg and the top of the box, so as to allow the stick free play in the hole. In the upper part of the upright stick, about an inch above the box, cut a notch. Now bore two clean gimlet holes in the top of the box, four inches apart, and, say, five inches from the front edge of the box, as shown in the illustration; through these holes pass the ends of a fine brass binding wire, leaving as wide a loop as possible inside the box; tie each end of the wire once round a piece of stick held horizontally across the top of the box, and make the ends of the wire about a foot long; join the ends and twist them into a firm loop; the position, direction, and arrangement of the wire, are plainly given in the illustration. Lastly, cut a piece of wood for a lever, ten inches

long; fasten one end with a piece of wire passed through two holes bored in the top of the box, near together and four inches from the front of the box. The wire should be adjusted so as to hold that end of the lever about an inch above the box-lid. The



trap is now ready to be set; this is done as follows: Select a position for the trap near a young tree or flexible sapling some six feet high; strip it of its branches, bend the top down and fasten the top loop of the wire firmly to it; place the bait on the lower end of the upright bait-stick; draw the cross-stick (which holds the wire loop) down onto the top of the box; adjust the lever over it so as to hold and keep the loop down, and secure the other end of the

lever very lightly in the notch of the bait-stick. The whole arrangement is so clearly sketched by "our artist" that any detailed description of the trap really seems superfluous. It will be seen that no animal can get at the bait without having his body completely encircled by the loop; and the slightest pull on the bait will loosen the lever from the notch, allowing the loop to spring upwards with a jerk, and holding the animal firmly in such a position that its legs have nothing to take hold of.

SNARES.

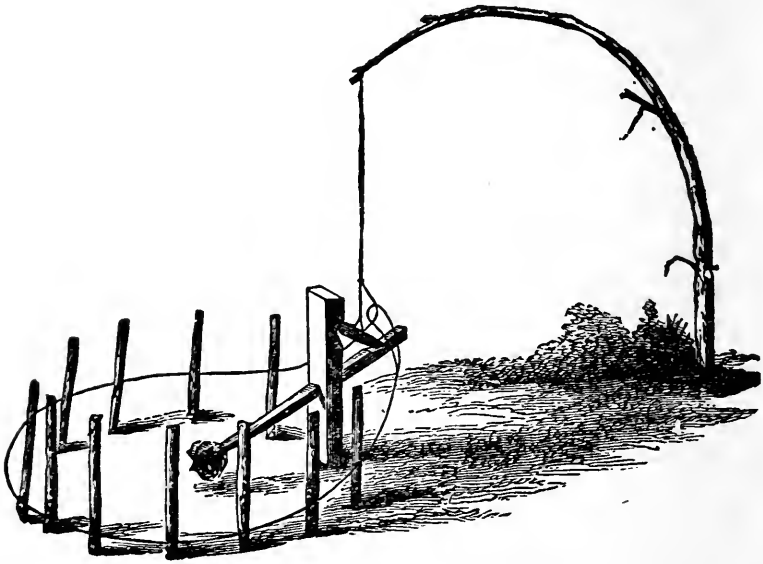
Traps which depend on a wire loop set in a box, for their catching principle, are usually very effective, especially where they can be set in the near neighborhood; but when they have to be carried any considerable distance, box-traps of any kind are not only cumbersome, but also preclude the possibility of using more than a very few at a time. Something less bulky, and therefore more portable, is required for more extended use; and this leads to the subject of snares, some of which will be described hereafter. They will be found to be, for all practical purposes, quite as successful and reliable as any of the regularly built traps; and, indeed, in some points decidedly preferable.

THE GROUND SNARE.

One of the best snares in existence is here represented.

The mechanical portion consists of only three pieces of wood: a bait-stick, ten inches long, pointed at one end, and a notch cut one inch from the other end; an upright post to drive firmly into the ground

and stand eight inches high, with a wide shoulder cut in its side four inches from the top, also a deep notch on the back of it, one inch from the top; lastly, a piece of wood three and a half inches long,



beveled at each end to a flat edge, to serve as a holder to unite the parts when in use. In order to make the foregoing parts available for use, select a spot conveniently near a flexible young tree about five or six feet high, from which the branches should be stripped; about four feet distant from it drive the upright post into the ground with its upper notch or back facing the tree; using the post as a starting-point, drive small stakes into the ground pretty close together, and three inches high, so as to enclose a circular space in front of the post, a foot in diameter, taking care that the tops of the stakes all incline somewhat inwards, to ensure free action to the wire noose.

The next thing is to set the snare: First, attach

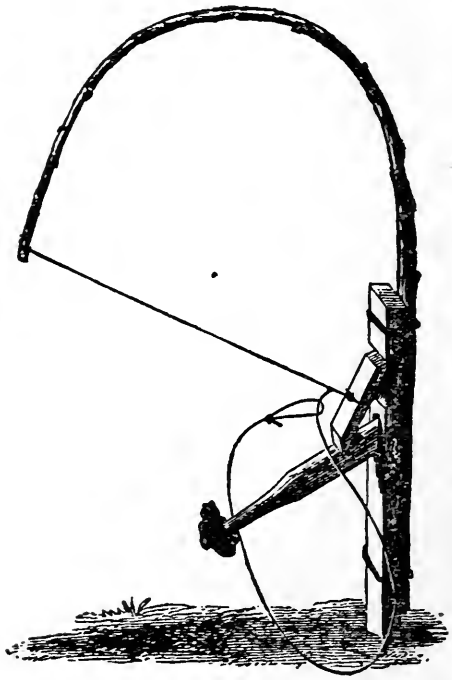
the end of a piece of fine brass binding wire about two feet long firmly to the top of the tree; the other end of the wire being fastened to the middle of the short holding-piece, keeping the flat side of the latter upwards. Make a wide loop at the end of another piece of fine wire, cut off enough of the wire to allow of a noose loosely surrounding the staked enclosure, pass the end through the loop, and secure this end to the wire that has already been attached to the tree, and at a point a few inches above the holding-piece. To set the snare, place the bait on the pointed end of the bait-stick; lay the bait-stick, notch upwards, under the shoulder that is on the side of the post, allowing it to project four inches behind the post; next, draw the holding-piece down, insert one end of it securely in the notch on the back of the post, the other end firmly but slightly in the notch on the end of the bait-stick; arrange the noose carefully around the outside of the enclosure, and the snare is ready for all comers. When an animal attempts to get at the bait, the stakes around the enclosure compel it to place its fore-feet within it. The moment the bait is disturbed, the tree springs up to its former position, drawing the noose tight around the animal's body just behind the shoulders.

The construction and application of the wooden parts of this snare are somewhat similar in principle to the support used for a figure-four trap (see page 17) with the difference, however, that the mutual arrangement of the parts, which in the trap are required to sustain a downward pressure, has to be modified in the snare in order to resist an upward strain. This style of snare recommends itself for its entire simplicity, and its portability; a sufficient number of each of the parts to make fifty traps would amount to only a trifling burden to carry, as the stakes for the enclosures can be cut on the spot

in the woods; and, for all purposes where animals are to be caught on the ground, it is almost infallible in its operation.

THE PORTABLE SNARE.

This is an ingenious modification of the snare just described, which requires no staked enclosure, and catches the intruder by the neck instead of around the body. It can therefore be applied to catching



animals or birds up a tree or in any place where an upright bough can be found to serve for a spring; it can, moreover, be carried in the pocket complete, and be set in working order in less than five minutes.

The parts required in its construction are three:

first, a piece of wood ten inches long, for the upright, having an oblong mortise cut through the middle of it, and a notch on its side two inches from the upper end; next, the bait-stick, five inches long, and flat, one end fitting easily into the mortise, where it is secured by a piece of stout wire driven through the upright, the other end of the stick being shapened to hold the bait; a notch is cut on the upper side of the bait-stick, an inch and a half from the mortise; and, lastly, the holder, a piece of wood four inches long, beveled to a flat edge at each end; to the middle of this, with its flat side downwards, attach a piece of fine brass binding wire, two feet long, terminating at the other end in a firm loop; about two inches from the holder fasten another piece of the wire long enough to make a noose some seven inches in diameter, as shown in the illustration. This completes the arrangements. The snare is set by fastening the upright piece with wire in the stem of a flexible sapling five or six feet in height, stripped of its branches and twigs; attach the looped end of the wire (which is fastened to the holder) to the top of the sapling; draw the holder down, and insert one end of it firmly in the notch of the upright, the other end being made to catch lightly, but securely, in the notch on the bait-stick. The noose should be carefully adjusted so as to form a circle, of which the bait is the center, exactly as shown in the engraving. The moment the bait is interfered with, the effect is instantaneous, the noose catching the animal or bird round the neck, and suspending it aloft in the air.

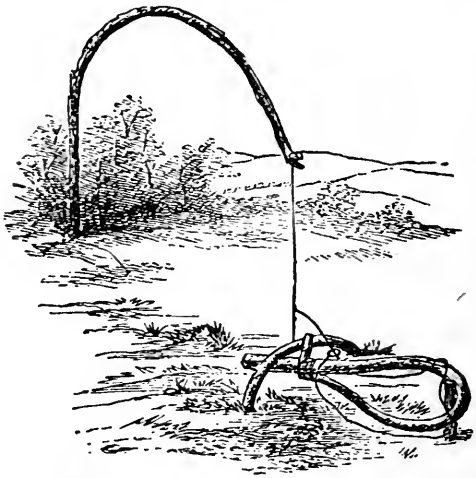
This snare is substantially the one used by poachers in those countries of Europe where catching birds or animals by means of snares is forbidden by law, and punished as a crime. In this country there is nothing to prevent their use. The only parties

who are likely to be injured by catching small birds are the farmers, who are thus deprived of their only defense against their worst enemies, the worms, grubs and grasshoppers.

The few birds caught in snares, however, bear no comparison to the slaughter of birds by powder and shot, in some localities amounting almost to extermination—their untimely death serving no other practical purpose than the amusement supposed to be afforded to the gunner.

THE BIRD SNARE.

For catching small birds there are few contrivances better or simpler than the snare shown in the engraving here given. To construct one of them, first cut a piece of bramble, willow, or other flexible twig, about eighteen inches long; bend the ends



together into the shape of a horse-collar, and tie them fast, leaving the thicker and projecting two inches beyond the point of union; lay this *spreader* down flat, and on the upper side of the projecting

end cut a clean notch. Next, select a flexible switch, some four feet long; plant the thicker end firmly in the ground, and tie a piece of whipcord, about eighteen inches long, to the thin end; tie the other end of the cord around the middle of a small bit of wood for a *catch*, two inches long, one end of which is beveled to a flat edge. On the cord, three inches from the catch, fasten a strong horse-hair, or very fine catgut (such as is used for trimming fish-hooks), full two feet long; the end being made into a firm loop, so as to form a running noose of the whole. Cut another twig, sixteen or eighteen inches long, pointed at both ends; drive the ends into the ground so as to form an arch about twenty inches distant from the upright switch, and at right angles to it; bring the notch of the spreader exactly under the inside of the arch; and, at the point where the wide end of the spreader touches the ground, drive a peg firmly, leaving the peg projecting two inches above the ground.

In order to set the snare, adjust the inside of the wide end of the spreader against the peg, one and a half inches elevated above the ground; draw the catch down behind and underneath the arch, making one end of the catch lay perpendicularly against the outside of the arch, and secure the other flattened end in the notch of the spreader. The tension of the whipcord will keep the spreader suspended above the ground. Lastly, arrange the noose over the arch and loosely on the ground around the spreader, the bite of the noose being raised over the peg and laid across the wide end of the spreader; without this latter precaution, the noose would catch behind the peg when the snare was sprung. The bait is strewed on the ground inside the spreader. The bird, in hopping on the spreader, causes it to drop down from the catch, the switch is released, and the noose

is suddenly tightened, sweeping the top of the spreader, and catching the bird by the legs. It is always advisable to watch the snare, as a bird, when caught, will soon flutter to death.

NET TRAPS.

THE CLAP-NET.

The clap-net is a favorite trap with bird-fanciers. It is set in motion by a person watching it, who thus has the opportunity of leaving alone any birds that come within its range, and are not suited for his purpose. It consists of two pieces of close netting, made of fine, strong thread, each fifteen feet long and five feet wide. Next, provide four rods, each five feet long and about an inch thick, of any light wood that will not split easily; bore a hole through each of the rods, about an inch from one end (a red-hot wire is the best instrument for this purpose, as it makes a clean hole without danger of splitting); into the other end of each rod screw a strong brass

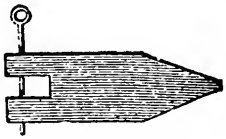


FIG. 1.

ring. Procure also four pieces of wood, eight inches long (or long enough to hold firmly when driven into the ground), and about three inches wide; sharpen one end of each to a point; at the other end of each cut a slot two inches deep, and bore a hole straight through both of the shoulders of the slot, to receive a stout wire pin, as shown in Fig. 1.

Take one of the nets and two of the rods; fasten each *narrow* end of the net to one of the rods, whip-

ping it securely from end to end, taking care that the ring ends of both rods lay on the same side of the net. Next, take the other net, and fasten it to the two remaining rods in exactly the same manner as the first.

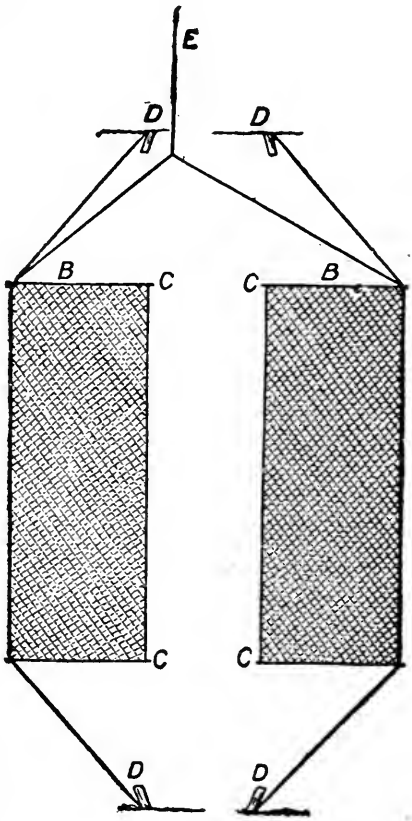


FIG. 2.

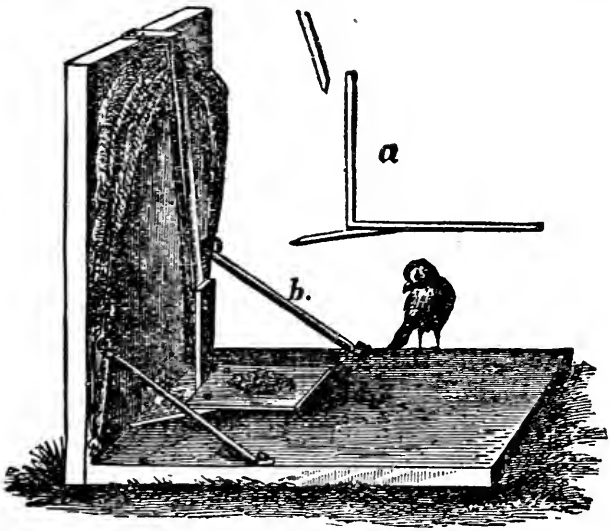
Select a level piece of ground, free from stones, high tufts of grass, etc.; lay one of the nets extended flat on the ground, and at *C C* (*see Fig.* 2, *right-hand net*) drive one of the slotted pieces firmly into the ground, one at that end of each rod which has a hole bored in it; the flat side of the slot laying in the

direction of the long side of the net. Insert the end of each rod into the slot ready to receive it, and hinge it securely by drawing the wire through. Five feet away from each of the points, marked *C*, and exactly on a line with *C C*, drive a strong peg, *D*, sloping away from the net; pass a strong cord through the rings on the rods, knotting it to each ring, and leaving the cord between them just long enough to stretch the net square; fasten each end of the cord to the pegs, drawing it tight, and keeping the net in true square. Proceed with the other net in the same manner, locating its slot-pieces, *C C* (*see left-hand net*), each six feet distant from and opposite to the corresponding points, *C C*, of the first net. Lastly, take a cord twenty feet long, fasten its ends to the brass rings of the two rods, *B B*, forming a slack loop. Another cord, *E*, is attached to and a little to one side of the middle of the loop. By drawing the cord, *E*, in a direction away from the nets and slantingly upwards, the nets will flap over and secure any bird on the open space between them. The draw-cord is placed somewhat away from the middle of the loop, in order to make one of the nets move a little faster than the other, and cause them to overlap one another without fouling.

NET TRAP FOR BIRDS.

The solid part of this neat little trap consists of two pieces of board, sixteen or eighteen inches square; these are nailed together at the edge, as shown in the illustration. Bend a piece of stout wire into the shape of an arch, the same height as the upright board, leaving the ends of the wire long enough to twist into an eyelet at each end; fasten each eyelet with a small staple to the joint of the board, so as to form free-acting hinges at the bottom

of the arch. Lay the wire arch flat on the lower board and whip the edge of a piece of netting firmly on the whole wire from hinge to hinge; leaving the wire in the same position, fasten the other edge of the net to the upright board, using only sufficient net to enclose the space needed. Now raise up the wire flat against the upright board; on each side of it, a



short distance from the hinges, fasten an elastic (*b*), stretch it tightly and fasten the other end to the side of the lower board, as seen in the engraving; these will draw the wire and netting down, and keep them so, when the trap is sprung. Provide a strip of wood about three-eighths of an inch square; to one end of it fasten firmly with twine a strip of leather to form a hinge, and nail the leather on the middle point of the upper edge of the upright board; the hinged strip or spindle should be long enough to reach, when hanging down, to within about three inches of the bottom board. The platform, of which a diagram is given (*a*), consists of three parts; the foot-board

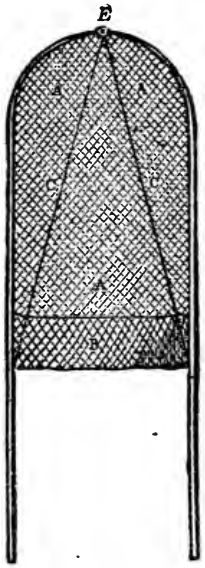
of thin wood (cigar-box is just the thing), about four inches square; the upright, three-quarters of an inch square, and long enough to reach the lower end of the spindle; and the hinge-piece, a piece of thin wood (similar to that used for the foot-board). The three parts of the platform are arranged as follows: one end of the upright post is nailed to the hinge-piece, near the edge, the opposite edge of the hinge-piece is fastened by a strip of leather to the bottom of the upright board; and the foot-board fastened against the post (*see diagram*) so as to be horizontal when the trap is set. This is done by first lifting the spindle up out of the way; next drawing the wire arch up flat against the upright board; the spindle is then brought straight down so as to keep the wire from falling down; lastly, the lower end of the spindle is secured by drawing up the upright of the platform just high enough for the extreme end of the spindle to rest behind it. The bait is placed on the foot-board, and the weight of a bird hopping on it to feed will be sufficient to depress the platform, set free the spindle, and allow the wire and net to come down with a snap, catching the bird alive and unharmed.

BAT FOWLING NET.

This is a contrivance for catching birds at night, and is constructed as follows: Two light poles of ash or other light flexible wood some eight feet long are bent at one end, as shown in the illustration, each being kept in a bent position by a cord, *C*, one end of which is tied to the top of the pole, the other end secured about half way down. The two bent ends are hinged together by a strip of leather, at *E*. A fine net, *A A A*, seven feet long and four feet wide, is fastened between poles, the bottom end of it being

turned up about eight inches, forming a bag or pocket, *B*.

The method of using this net is as follows: There must be three persons engaged—one to hold the net, another to carry a lantern, and a third to beat the bushes, &c. The darkest nights should be chosen, and if a stiff breeze is blowing so much the better, for the birds then roost low and are not able to hear so well. The net should be held about a foot from the bush, &c., and the lantern so held that the light be thrown evenly all over the back of the net. The



bush should then be slightly beaten, and the birds, on being disturbed, will fly against the net, which should be instantly closed and brought to the ground, and the birds secured.

This mode of bird-catching cannot be too quietly performed, and the lantern should be covered in walking from one place to another, and, indeed, at all times when not actually in use, provided it be not

too dark to see one's way. Thick bushes are the favorite resort of small birds, as also the sides and eaves of corn and hay-stacks. In sheds thatched with straw, sparrows are easily taken by throwing the light from the lantern up the corners of them, and then beating the thatch. The birds will fly to the light and gradually flutter down the wall, when they may be taken with the hand.

STEEL TRAPS.

A great deal of ingenuity, combined in some cases with considerable fertility of invention, has been brought into play in the construction of traps. The results have been various; a few evidently worked out by persons accustomed to handle tools, and within reach of proper materials, are, as far as appearances go, first-rate traps, built on the square, and with all the modern improvements. They serve their purpose well—of course they must—otherwise they would be nothing more than neatly-constructed toys. There are others, not dependent on square, compasses or smoothing-plane, that require only such materials as are met with abundantly in Nature's workshop, the woods; these are the result of real ingenuity. There were animals to be caught, and somebody wanted to catch them; this enterprising individual had no other tools than an axe and a jack-knife, and was a hundred miles away from a lumber-yard. Necessity is the mother of invention—and this original somebody, in default of planed boards and sharp tools, seized an idea, worked it out in the rough, and caught the animals; mind triumphant over matter; enterprise undaunted by circumstances. The majority of these contrivances are, however, to a great extent, merely makeshifts, good enough for want of

something better, or answering the purpose where only one trap is sufficient; but where trapping is to be carried on in earnest, they lack the first requisites both of portability and of being adapted to all reasonable occasions. The only reliable trap, applicable to almost every purpose, is the regular steel trap, which can be bought at any hardware store, and of various sizes to suit the object in view. There are a great many steel traps manufactured and sold that are either worthless or possess serious defects, and a defective trap is actually worse than none at all. Minute directions for making these traps are entirely unnecessary in this place; it will be well,

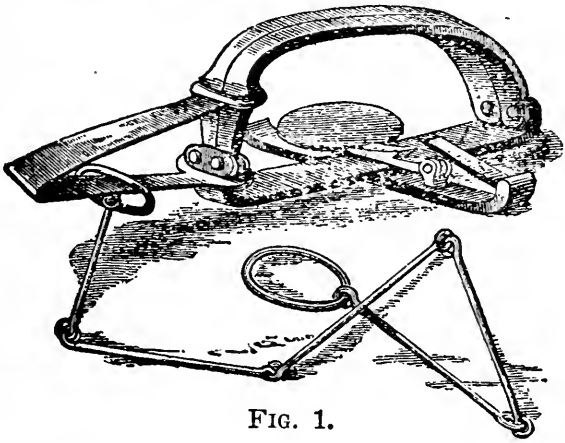


FIG. 1.

however, to describe their action, and to note the points which mark the superiority of some kinds over others; or, in other words, to afford some plain directions for the guidance of those purchasing steel traps, as to what is desirable and what is to be avoided.

By examining the illustration here given in Fig. 1 the construction of a single-spring steel trap is clear almost at a glance.

The base or foundation consists of two flat bars

riveted or welded at right angles to each other. The principal bar has both ends turned up at right angles; the jaws being riveted to the inside of the upright ends. In a good trap these rivets should allow the jaws to play *freely* on them, without any hitching, rendering the joints entirely free from stiffness in their action.

The spring is made of a flat piece of well-tempered steel, bent in the shape of a V; terminating at each end with an oval plate, in which a slit is made at right angles to the length of the spring. By one of these slits the spring is firmly secured to one of the upright ends of the bottom bar, below the rivets which hold the jaws; the ends of the jaws on that side of the trap pass through the slit at the upper end of the spring. which holds the jaws very firmly together when the trap has been sprung. In a well-made trap, the upper end of the spring must travel easily on the jaws, in order to secure instantaneous action.

The jaws are two strips of steel, bent into the form of a half-oval, each having a shoulder near one end, underneath which the upper part of the spring rests; the ends below the shoulder are slightly beveled on their outer edge, causing them to taper somewhat, from the shoulder down to the rivets. In some of the steel traps offered for sale, the material of which the jaws are made is quite thin; this is a serious defect, as they are apt to cut off an animal's paw, instead of holding it fast; traps with thin jaws should, therefore, be avoided as faulty in their construction.

The pan is a square or circular plate attached to one end of a strip of metal, the other end of which works *freely* on a hinge fastened to the bottom cross-bar; midway between the pan and the hinge, a notch is placed, the shoulder of the notch beveled inwards.

The pan should stand on the cross-bars, exactly in the middle, or where they cross each other; this brings the hinge about half way between the middle of the cross-bar and one of its ends; this end is bent up and furnished with another hinge, to which a lever is attached; the lever is a straight piece of metal beveled at the end furthest from the hinge, and just long enough to fit into the notch before mentioned, when the pan is elevated about an inch. The length of the bottom cross-bar, on which the hinges are placed, should be such that, when the jaws are opened out, one of the jaws should lay between the hinges.

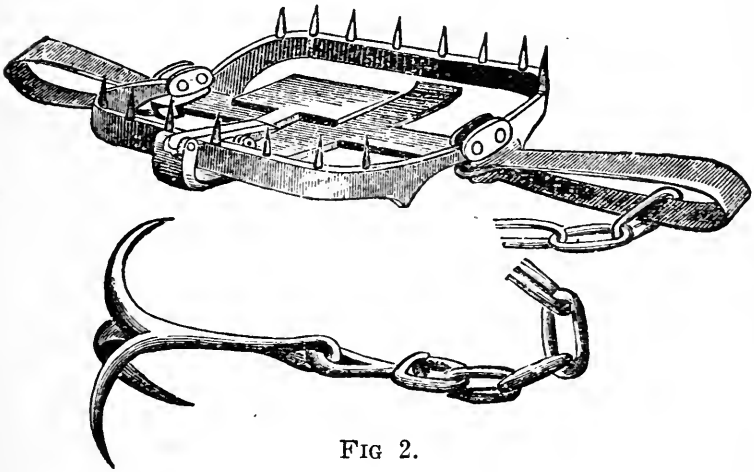


FIG 2.

The trap is set by pressing the upper side of the spring down, and holding it in that position by placing one foot upon it; this allows the jaws to open out flat, one of them falling into the space between the hinges; the lever is then laid over the jaw, and fitted into the notch by elevating the pan. The spring is next released, and the trap is ready for action. The arrangement of the jaws and lever will be seen by referring to Fig. 2.

To prevent the animal, when caught, from running away with the trap, a chain is attached by a ring, either to the spring (see Fig. 2) or to the bottom cross-bar (see Fig. 4). This chain usually consists of short lengths of strong wire linked together at the ends; the end length passing loosely through a hole in the ring, and riveted on the inside. By this arrangement the ring acts as a swivel, which prevents the trap from being twisted off the chain. Where a regular link chain is used, an extra swivel must be introduced, as shown in Fig. 4. It is very important that the swivel should work freely, and this point should not be neglected when buying steel traps. There are three sizes of the single-spring Newhouse trap, designated by the numbers 0, 1, and 1½ respectively; the number 0 being the smallest, and the traps progressing in size and strength with the increasing numbers.

For small traps, such as are used for muskrats, mink, &c., a single-spring is amply sufficient; but traps of larger size, for catching bears and other large animals, require two springs, one at each side of the jaw, as seen in Fig. 2, one spring being sufficient to maintain a firm grip the whole length of the jaws. Sometimes the inner edge of the jaws is furnished with spikes; this is not generally approved of by experienced trappers, who seem to prefer a well-made trap without any such addition to it. A grappling-iron for securing the end of the chain is a useful appendage in some cases; it is fastened to the chain by a swivel, as shown in Fig. 2.

Although steel traps have been in use for a long time, they were generally so clumsily made, and the parts so carelessly put together, that there were but few to be found at all reliable; the great majority of them were either faulty in the material, breaking easily, or soon getting out of working order, or else

so badly constructed that they would fail to act promptly when set and sprung. In later years considerable attention has been paid by trap-makers to remedy these vexatious defects, and the preference is now generally given to those known as the Newhouse traps. A glance at Fig. 3, which represents a

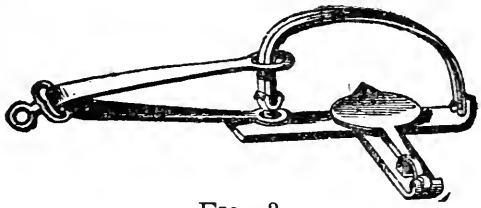


FIG. 3.

single-spring Newhouse trap, will show the points in which these latter differ from the ordinary kind. The jaws, and that portion of the spring which holds them together, are much simpler in form than in the old style of trap, and the parts are all put together with great care; thus ensuring, as far as possible, both strength and free action. In the larger, double-spring Newhouse trap (see Fig. 4) the same improvements will be remarked in the form and construction of the parts; the chain is here attached to the bottom bar of the trap, instead of to one of the springs. This prevents the spring from being damaged or getting drawn out of shape by the struggles of a large animal in its efforts to get free. The foregoing descriptions may, perhaps, appear more minute than is necessary, as no one but an experienced blacksmith or machinist can be expected to make these traps; but, unless their working principles are thoroughly understood, few persons could distinguish between a well-made, serviceable trap, and an imperfect and utterly useless machine, which would be more likely to scare away than catch any animal possessed of the least degree of cunning.

The double-spring Newhouse traps may be obtained in five different sizes, numbered 2, 3, 4, 5 and 6 respectively; number 2 being the smallest double-spring trap, and number 6 the largest and most powerful of all. This last number is rarely used, as it is applicable only to such animals as the grizzly

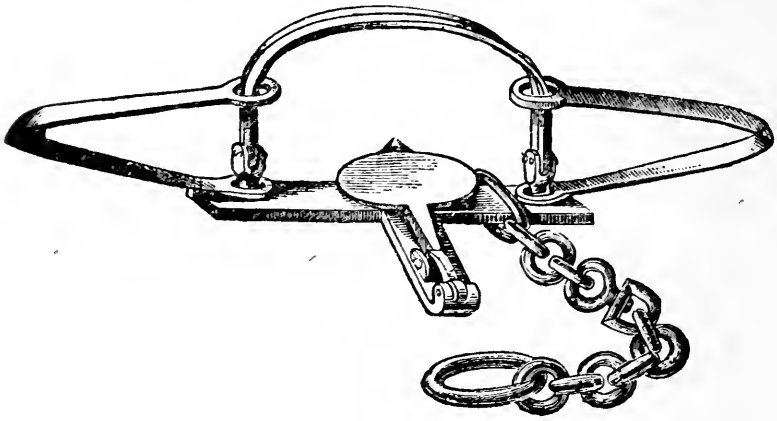


FIG. 4.

bear, or other beasts of like size, and of enormous power. The series of eight different sizes of Newhouse traps, single and double, afford ample variety to serve for the capture of animals of all kinds. In the directions hereafter given for trapping the various animals, the size-number of the trap appropriate for each will be designated.

METHODS OF SECURING STEEL TRAPS.

There are various ways of securing steel traps. In some instances all that is necessary is to fasten one end of a chain firmly to the trap, and the other end to a tree or stake. This plan, however, will not suit all occasions, as many animals will, when caught by one foot, rather gnaw or twist that leg off than lose their liberty. To provide against this, it is prefer-

able to fasten the chain to the end of a log, the size of the latter being suited to the animal to be caught. Its weight should be sufficient only to be a serious impediment to the movements of the animal that has been caught in the trap, but not heavy enough to render the trap immovable. This contrivance, from the nature of its action, is called a CLOG; but for the capture of very large animals, the grappling iron (see Fig. 2, page 64) is usually employed instead of a clog, which would be, from its necessary size, unwieldy and less easily attainable.

Again, it may be needful to preserve the captured animal from falling a prey to others. In this case a SPRING-POLE is the best arrangement. This is a pole of sufficient length and flexibility, one end fastened firmly into the ground, and the other end bent down and secured in such a manner that a slight effort will release it; a strong peg, with a notch on the side, driven firmly into the ground, will answer for this purpose. The end of the chain is then made fast to the top of the pole, and the animal's struggles to run away with the trap will end in his being hoisted up with a jerk and kept out of the reach of outside interference.

In trapping beavers, musk-rats, mink, and other animals that require to be drowned in deep water after being trapped, it is advisable to make use of a SLIDING-POLE. This consists of a smooth pole, one end of which is driven obliquely into the bottom of the pond or stream, where the water is deep, the other end secured to a stake on the bank. A strong ring should be put on the pole, large enough to slide on it freely, and the buried end of the pole must have spikes or other projections on its sides to prevent the ring from slipping off; to this ring the chain of the trap is fastened. The animal, when caught, dashes off with the trap, and is guided by

the chain and ring to the deep water, where the weight of the trap keeps it from rising to the surface again.

CAUTIONS IN HANDLING TRAPS.

In order to ensure success, steel traps must not only be kept free from rust by frequent oiling, but also be handled with clean buckskin gloves, so that no trace of contact with man is left upon them when set. Animals of keen scent will easily detect the touch of a man's hand on a trap, and this will deter some of them from "taking their medicine" almost as effectually as if the man were present. Powerfully smelling substances, such as fish-oil, assafœtida, &c., which are explained in another place, are sometimes called into requisition to overcome any such human traces; but, in all cases, no precautions should be neglected to insure success.

HINTS ON BAITING STEEL TRAPS.

The successful use of a steel trap depends greatly, and in many cases altogether, on the manner in which the bait is applied.

The practice formerly was to put the bait on the pan of the trap. Experience has shown that this is the very worst place to put it. The attention of the animal should not be drawn to the trap; in fact, it is far better to conceal the trap entirely from view by placing it in a hollow just deep enough to bring the pan on a level with the ground, and then covering it lightly with moss, grass, feathers, rotten wood in powder, chaff, or any substance calculated to disarm suspicion. The best place for the bait is over the trap, in such a position that the animal cannot get at the bait without putting its foot on the pan of the trap in its effort to reach it. With the bait laid

on the pan, a small animal might easily carry it off, without exerting sufficient downward pressure on the pan to spring the trap; which even then would catch it by the head, and probably spoil the skin.

DEVICES FOR USING STEEL TRAPS.

The steel trap is frequently used without any bait at all, it being placed, carefully hidden, in the middle of some beaten track which indicates the road that an animal is accustomed to travel; so that the next time it passes that way, it will put its foot in the trap and be caught.

It is a good plan, also, to make a small enclosure by driving stakes into the ground in a circle, close enough together and high enough to prevent any entrance except at an opening left on one side just large enough for the purpose; so that, if some attractive bait is put inside the enclosure, any animal that goes in for it can be caught by a steel trap placed at the entrance properly concealed.

Another device, suitable for small animals, is to construct a narrow passage-way by means of pieces of board nailed together at the top, and spread apart at the bottom wide enough to allow the animals to pass between them. The passage-way should be eighteen inches or two feet long; one end of this is blocked up, the bait is placed inside the closed end, and a trap at the entrance. Or, the passage-way might be made a little longer, open at both ends, with the bait in the middle, and a trap at each entrance. As a simple modification of the last contrivance, two strips of board may be stood on their edge, open at one end and closed at the other, in the shape of a >, and proportioned to the size of the animal to be caught. The bait is placed in the angle,

and the trap at the entrance, properly disguised or covered, ready to seize any intruder.

The measurements here given are, of course, only to give a fair idea of proportion; as the dimensions must be regulated to suit the purposes in view, and the size of the animals sought to be captured.

Any available arrangement or device by which an animal is compelled to step on the trap in order to reach the bait, without allowing it a possibility of obtaining it in any other way, will be found of great practical assistance.

The natural passage-way, for instance, between two large trees growing close together, suggests a very favorable location for steel traps. The bait, in this instance, should be placed in the middle of the passage, and a well-concealed trap at the entrances on each side. The experienced trapper is always on the alert, and quick to perceive any natural advantages which he can turn to good account, and save both time and labor spent in the construction of artificial enclosures and other such devices.

Among the many uses to which a good steel trap may be put, there are few more important than that in which it is employed as a night guardian to the farmer's poultry-yard.

THE GUARDIAN OF THE HEN-ROOST.

One of the most attractive objects to the four-footed midnight marauder, is a well-stocked hen-roost; and its attractiveness may be turned to good account for turning the tables on the fox, mink, skunk, or, indeed, any animal that has a constitutional predilection for poultry. The following ingenious, but very simple arrangement, will be found entirely successful in not only fully protecting the chickens, but also rendering the capture of the in-

truder sure. The contrivance consists of two parts, independently of the trap. The first is a box without a lid, and one of its ends taken out; this is inverted,

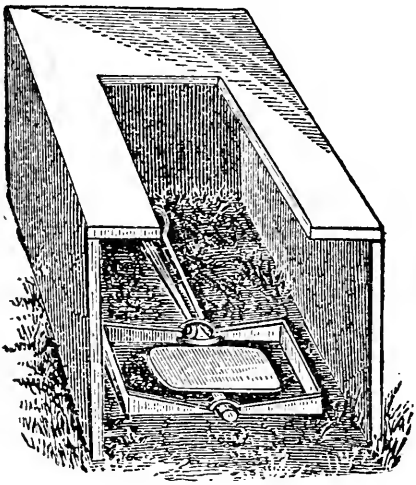


FIG. 1.

as seen in illustration, Fig. 1, and a piece of the bottom cut away at ane end, corresponding in size to the inside measurement of another similar, but

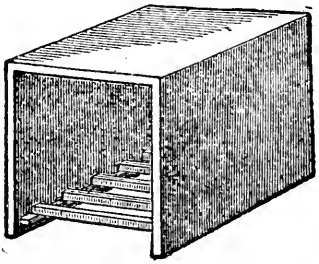


FIG. 2.

smaller, box; this latter also is without lid, open at one end (see Fig. 2), and large enough to furnish a comfortable roosting-place for a chicken. This smaller box constitutes the second part of the affair;

instead of a lid it is fitted with laths or slats across the width, the ends of the slats being secured to cleets nailed one on each side, along the inside of the box.

To make these arrangements available, the larger box is placed on the ground inverted, with its open end against, and enclosing, the entrance to the hen-roost, the latter being allowed to remain invitingly

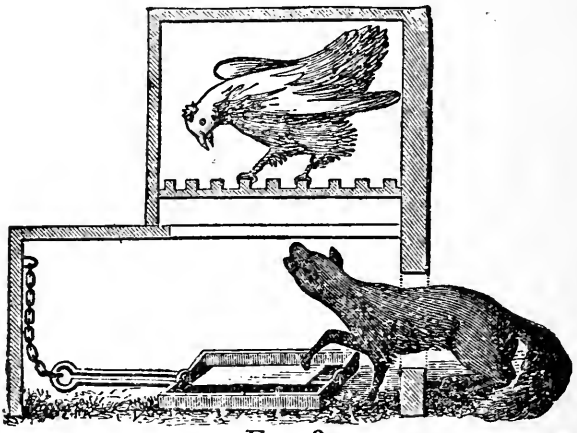


FIG. 3.

open. Inside the box, and just facing the entrance, a steel trap is placed, set for effective service, and lightly covered with grass, earth, or anything that will serve to conceal it completely from the sight of night prowlers; the chain of the trap being attached firmly to the box. A chicken is next placed inside the smaller box, and this inverted exactly over the hole which has been made in the bottom (now the top) of the larger box. The position of the whole is shown in Fig. 3. Any enterprising fox, or other hen-roost thief, passing by, will take advantage of the open entrance, survey with feelings of unmixed satisfaction the chicken overhead, take just one step nearer to secure his prey, and find his

whole energies enlisted in fruitless endeavors to depart without his anticipated feast; his captivity rendered almost unendurable by the tantalizing sight of his supper "so near, and yet so far."

BAITS AND THEIR USES.

It has already been mentioned that steel traps may be used in some instances without the aid of any bait; and, when thus employed, depend for success on the observed habits of the animals, without appealing to their appetites or sense of smell; but with dead-falls, snares and traps in general, some inducement is necessary to persuade animals to take, of their own accord, the steps necessary for their own destruction. The baits which are used for this purpose generally consist of some substance which forms the ordinary food of the animal to be captured, or for which observation has proved that they have a decided liking. The suitable bait for different animals will be found in connection with the directions given in the following pages for their capture, and under their respective headings. Trappers, however, have discovered, and make use of, various substances to which they give the name of "Medicine," and which have the power of attracting certain kinds of animals from a considerable distance, and leading them blindly to any desired spot. These will be considered under the head of

ATTRACTIVE BAITS.

Among the various substances used by trappers as a bait for attracting the majority of the fur tribe, there are few that are as effective as fish-oil. This is prepared by cutting up eels, trout, or any other small fish, into very small pieces; these are placed

in a bottle, loosely corked, and hung for two or three weeks exposed to the heat and rays of the sun in the summer season. A kind of oil forms, possessing an intensely penetrating odor, which can be detected by these animals from a great distance, and allures them almost irresistibly to the spot where it has been sprinkled.

The drug known in commerce as CASTOREUM, and called BARK-STONE by the fur traders, seems to exercise a more powerful attractive influence over the beaver than any other bait that can be employed for the purpose, and is obtained from the animal itself. It is an unctuous substance of a strong, musky odor, contained in two glandular sacks situated near the anus. Both males and females are said to be furnished with one pair of bags containing castoreum, and also with a second pair of smaller ones laying directly behind the others, filled with a white fatty matter, of the consistence of butter, and exhaling a strong odor. This latter substance is not an article of trade, but the Indians occasionally eat it, and also use it to flavor their tobacco for smoking purposes. The castoreum, when fresh, is of an orange color, which deepens into a bright reddish-brown during the process of drying, which is performed in the shade. The male and female castoreum is of the same value, and is never adulterated in the fur countries.

Another attractive bait, especially alluring to the muskrat, is an oil obtained from this animal in the same way that castoreum is found in the beaver. It is said that the oil of the strongest quality is yielded by the female muskrat. A similar musk is also obtained from the otter, which is used very successfully in attracting that animal.

The oils of rhodium, amber, sweet fennel, and anise, have all a powerful attraction for most fur-

animals and for the rat species in general; assafœtida also possesses a similar quality.

A mixture composed of muskrat-musk, assafœtida, oil of anise and fish-oil is strongly recommended by experienced trappers as the best "medicine" that can be used to attract almost any animal. It is largely used to make trails, by sprinkling a few drops successively on the ground, and leading in a direction towards the traps. For this purpose, a small quantity of it is tied up in a thin leather bag, having a number of fine holes pierced in its lower part, through which the contents can be forced in drops by pressing the bag. This mixture is a combination of the various substances attractive to most of the different tribes of fur-animals; and is, therefore, more likely to succeed in its object than by using any of the ingredients separately. It is very useful also, from its powerful odor, to overcome the scent by which the recent presence of man is detected by the more keen-scented animals, and which is often instrumental in deterring them from approaching a trap.

It is not a perfume to be hankered after for the handkerchief; and, if not the *King* of stinks, it will make its presence in the *air apparent* far and wide.

TRAPPING.

The preceding pages have been devoted to a description of the means and contrivances for catching or destroying all kinds of animals and birds. A trapper, without some of these appliances to aid him, would be in about the same fix as a carpenter without his saw and plane; and, as the most elaborate description of a tool would fail to teach any one how to use it successfully, it is here proposed to give

detailed directions for adapting the traps and baits and other devices just described, to their various and particular uses; and, by a short description of the nature, form and habits of each animal, to lay down the methods which the experience of professional trappers has found to be the best in each case.

HOW TO TRAP THE MUSKRAT.

The muskrat, an animal peculiar to North America, is found throughout the Atlantic States in more or less abundance; they are also distributed northwards through Canada in latitude 69 degrees north, and are captured in quantities by the North-Western Indians, who make hunting them a part of their regular occupation. In length, the muskrat measures about fifteen inches, with a tail of ten inches; its head, neck and legs are short, and its thighs hidden in its body. The fur is short and downy, dark-brown on the upper surface of the body, and of an ash-color underneath, and was formerly much used as a substitute for beaver. It is endowed with a strong musky smell, but not very offensive. Its flesh is tolerable food. It lives along the banks of ponds and rivers, somewhat in the manner of the beaver. Although it has only a short web between the longest toes, it is a good swimmer.

The muskrats that inhabit ponds build their winter houses of grass, flags, pond-lily tops, sticks, or any other materials that the surrounding neighborhood may afford, plastered together with mud. They select a spot in the pond where the water is shallow, with considerable growth of grass, reeds, &c., and commence the foundation of the house on the bottom, building it up in the shape of a conical dome to the height of two or three feet above the surface of the water. It is affirmed by some persons that

Apples. Carrots, Turnips, Beets,

the height is regulated by an instinctive knowledge of the level that the water is likely to attain during the winter and spring freshets, and high muskrat houses should, therefore, be suggestive of an unusually wet season in prospect. Below the surface of the water holes are made for ingress and egress, whence the rats soon form tracks through the undergrowth to the entrances of their numerous holes in the banks. Inside the house, and above the surface of the water, they construct a sort of raised bed covered with moss, &c., on which they sleep, building it up to a higher level, when the increased depth of the rising water renders it necessary. When the water freezes, a hole is kept in the ice which forms on the water inside the house, to allow of their free passage to and from the interior.

When muskrats locate in a running stream, they usually choose a place where the bank more or less overhangs, and dig a hole or passage-way at the surface of the water into the bank. This passage at first tends downwards, and then bends upwards, gradually sloping, until it reaches the surface of the ground a short distance from the bank; at the upper outlets they build their houses in the same form as already described, about the size of a small water bucket, and, if possible, under a bush. In this way the outer entrance to the house from the stream is entirely under water.

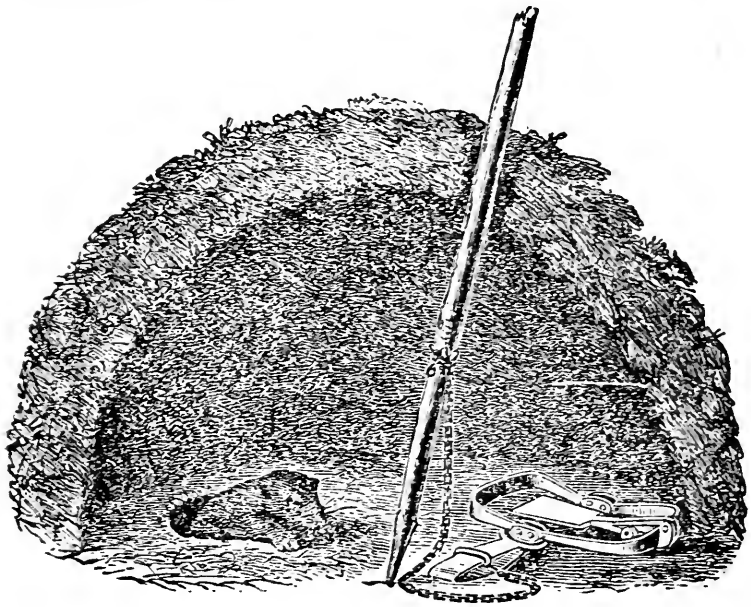
In summer it burrows along the banks of lakes and streams, forming branched canals many yards in extent, and making a nest at the extremity where the young are produced; three litters of three to five each in a season. The muskrats feed on grasses, roots of various kinds, tender shoots of the bulrush, acorns, spice-wood, and sometimes, when near cultivated districts, they eat turnips, parsnips, and carrots; they will also devour mussels and other shell-

fish when they can find them. In winter, when hard pressed with hunger, they have been known to eat each other; when one is wounded, the rest will make a meal of him. With this exception they are harmless and gentle, pursuing their avocations at night in an unobtrusive manner. In the mild season, when the lakes and ponds are open, they may be seen on a moonlight night sporting on the surface of the water, swimming, diving and circling, with all the frolicsome humor of children. They do little damage, except in a few cases when they dig up the borders of streams and ditches; but on account of their fur they are objects of ceaseless persecution. The fur is good in quality during the winter months, but it is in its best condition when the frost begins to break up in the early part of spring.

There are various ways of catching them. The simplest plan is to note the different spots on the banks of ponds or sluggish streams, where their tracks are marked by their dung; this will usually be found on sticks or logs which project from the bank into the water; on the end of these a No. 1 sized steel trap should be set, an inch or two below the surface of the water, secured by a chain of sufficient length to allow the muskrat, when caught, to get into deep water and drown; the other end of the chain being fastened to a stake driven in such a position that the trap and chain will lead the rat into deep water, and not allow him to get ashore. (*See Sliding-Pole, page* 68.) The smallest Newhouse trap, No. 0, will answer, but No. 1 is preferable. The bait must be on the end of a stick, placed in such a manner that the baited end is about eight or ten inches over the trap. It is of great importance that the captured muskrat should get into water deep enough to drown in, as the fur then retains its luster; and, unless it be drowned, the animal is very

apt to twist or gnaw off the leg by which it has been caught, and escape.

Another favorable place for setting the trap is in the interior of their houses. This is accomplished by breaking a hole in the upper part of the side of the house, through which a pole is inserted; the end, which is furnished with a spike, being driven into the ice inside the house; the other end remains projecting through the side of the house, as seen in



the illustration. To this pole the chain of the trap is fastened, and the trap is placed right in their sleeping-place, lightly covered with the moss or material which forms the animals' bed. The broken wall should then be plastered up again with mud; or a hole may be cut in the side of the house, on the surface of the ice, and the trap laid inside, the chain being secured to a stout piece of stick laid outside, across the hole in the wall, the hole being

then lightly repaired. In either case, the captured muskrat makes for the water, dragging the trap after it, the weight of which is sufficient to keep it under water and drown it.

The use of steel traps is a very sure way of trapping the muskrat, but it labors under the disadvantage of catching only one in a night in each trap. The following is another simple way of catching several at a time: Sink an old barrel to the level of the ground in the bank near the water's edge, and about half fill it with water; on the surface of the water, in the barrel, place two or three light strips of wood, upon which put a few pieces of carrot or sweet apple. From the barrel to the tracks of the muskrat, form a trail of small pieces of the same bait, so as to lead the rats to the barrel; they will jump in after the food, and will not be able to get out again.

In winter, when the ponds are frozen over, the muskrats may be caught by spearing them in their houses, securing sometimes two at once. This is a proceeding that requires great caution, both in approaching the houses and in using the spear. The slightest noise made upon the surface of the ice, even an incautious tread of the foot, will be sufficient to alarm the muskrats, which will escape into the water immediately; and the walls of their houses are sometimes so firmly frozen as to prevent the spear from penetrating into the interior; it is said to be advisable, therefore, to choose the southern side of the house for spearing, as it is warmer, and offers a better chance for success; for a fruitless thrust will empty the house at once. When the spear has been driven into a house, a hole must be cut with a hatchet, in order to withdraw the spear and game. Some trappers are very successful in spearing the muskrats through the ice, when the

latter is clear enough, and not too thick, allowing the movements of the animals to be visible through it. As soon as a muskrat rises to the under surface of the ice to breathe, a dexterous thrust of the spear will catch it.

An excellent place for catching the muskrat, either by trap or spear, is the spot that it has prepared for a feeding place, which consists of a little mound in the flags or grass on the surface of the water, made large enough for the accommodation of one rat only at a time. The animals frequent these spots at night, seeking them also when disturbed in their houses.

The muskrat resembles the beaver in many of its habits, but is not as keen in its scent, and therefore easier to trap; it requires only a clear understanding of their ways, and proper care in setting and baiting the traps, to be fairly successful in trapping quite a number of them during the season.

HOW TO TRAP THE BEAVER.

The beaver is a large, amphibious animal, measuring three feet and frequently still more in length. Its teeth are something remarkable, two incisors and eight molars in each jaw, twenty in all; and the power of these natural tools is such that a beaver will bite off a sapling the size of a walking-stick with a single effort. There are five toes on each of the feet, but those of the hinder ones only are webbed like a goose, the webs extending beyond the roots of the nails. The second toe of the hind legs has a double nail, or rather two, one like those of the other toes, and another situated obliquely beneath it, with a sharp edge directed downward. The inner toe of the same feet has also a less perfect double nail. Owing to the shortness and inequality of its limbs, its gait is waddling and ungraceful.

Fresh soft wood with bark on

This is not improved by the cumbrous nature of its tail, which is broad and flat, nearly oval, and covered with scales, measuring about eleven inches in length. This appendage is useful in the water, being employed both as a paddle and a rudder, and is also used by the animal for digging and carrying dirt, &c.

The color of the beaver is a reddish-brown; there are varieties, some of which are flaxen-colored, some black, and others albinos or white. The young of the beaver are produced five to seven at a birth, in April or May, with their eyes open, and take to the water in a month after birth. Their common food is the bark of trees—birch, willow, and cottonwood, and the roots of aquatic plants, especially the pond-lily. The fur is of two kinds, one composed of long, stiff, elastic hair, the other of a fine, soft, compact down, which gives great value to the skin.

Beavers usually dwell together in families, consisting of one or two pairs of full-grown, and their progeny of the three preceding years. When beavers reach their fourth year, they separate from their parents and set up establishments of their own, assisted in their work by the "old folks." They generally shelter in the summer time in holes which they burrow in the banks of the stream, with the entrances under water. In September they commence to build their hut for the winter. This is a structure composed of branches, twigs and mud, with the foundation on the bottom of the river, and rising up, like a mound, above the surface of the water; where this is deep enough for their purposes, the hut is located near the holes in the banks; but when the water is shallow, they construct a dam across the river below the hut, high enough to create above it a pond five or six feet deep. The dam is built very strongly, arching against the stream when

this is rapid, and consisting of small trees, sticks and stones compactly cemented together with mud. The beavers cut down the trees by gnawing through them with their teeth, and then drag them to their places in the dam, using their tails to carry the mud, and to work it into a smooth, compact wall. The entrances to the hut are all under water, thus affording no ingress to the hut except through the water. The wall of the hut itself is very thick, and when frozen affords a complete shelter from the attack of other animals. Before the frosty weather sets in, the beavers collect a store of bark, mostly from willow, poplar, and other trees of that sort; this they deposit under water around their hut, and carry it into the house, a little at a time, as they require it during the winter for their food.

When the young beavers of the family get to be four years old, they choose a place on the river, a short distance above the parents' hut, and proceed to construct another hut, and, if necessary, another dam, and rear a family of their own. In this way successive dams are often seen in a stream, one above the other. The best places to set traps for the beavers is in the water, just at the entrance to their holes in the banks; a stick, with a little castoreum on the end, is stuck in the bank a few inches above the water; the animals are thereby induced to raise themselves on their hind legs to reach the bait, and they are caught. Another method is to break a hole in the dam four or five inches below the surface of the water, and set a trap on the upper side of the dam, below the hole. The beavers soon discover the break, and, when examining the leak, are caught in the trap.

A steel trap of the size of Newhouse's No. 4 may be set in the water at any point where the beavers seem to make a habit of landing on the bank, the

trap being placed some inches below the surface, on the spot that their hind legs must touch the bottom in order to spring up on the bank.

The proper arrangement for baiting the traps is as follows: The end of a small stick, chewed or pounded soft, is dipped in castoreum, which is kept in a horn; it is then set in the water with the anointed end above the surface, and right over the trap. The beavers scent the castoreum for a hundred yards or more, and uttering a cry of joy as they inhale the, to them, delicious fragrance, they approach the delusive bait and are caught in the trap.

In all cases the trap must be fastened to a sliding-pole (*see page* 68,) so that the beaver, when caught, will be drowned.

Beavers have a very keen scent, so that it is necessary to be very careful in handling the traps, and washing out all footprints by a liberal use of water.

Persons who attempt to take beaver in winter should be thoroughly acquainted with their manner of life, otherwise they will have endless trouble in effecting their purpose, because they have always a number of holes in the banks which serve them as places of retreat when any injury is offered to their houses, and in general it is in those holes that they are taken. When the beavers which are situated in a small river or creek are to be taken, the Indians sometimes find it necessary to stake the river across, to prevent them from passing; after which, they endeavor to find out all their holes or places of retreat in the banks. This requires much practice .and experience, and is performed in the following manner: Every man is furnished with an ice-chisel which he lashes to the end of a small staff about four or five feet long; he then walks

along the edge of the banks, and keeps knocking his chisel against the ice. Those who are acquainted with the work know by the sound of the ice when they are opposite to any of the beavers' holes or vaults. As soon as they suspect any, they cut a hole through the ice big enough to admit a full-grown beaver, and proceed in this manner until they have found out all, or as many as possible, of their places of retreat.

While thus employed, other men and the women are busy breaking open the houses, which is sometimes no easy task, as these houses are often five or six feet thick. When the beavers find their habitations are being invaded, they fly to the holes in the banks for shelter; this is easily perceived by watching the motion of the water; the entrances of the holes are then blocked up with stakes of wood, and the beavers are hauled out by hand, if within reach, or by a long stick with a large hook at the end, if the hole be deep.

Beavers are occasionally caught by spearing through the ice, when clear and thin, as they come up to the surface of the water under the ice to breathe, in the same way as mentioned in connection with the muskrat on page 81.

Washington Irving appears to have possessed not alone great genius as a writer, but also a very clear knowledge of beavers and the way to trap them. From his well-known and interesting work, "The Adventures of Captain Bonneville," the following appropriate quotation is made:

"Practice," says Captain Bonneville, "has given such a quickness of eye to the experienced trapper in all that relates to his pursuit, that he can detect the slightest sign of beaver, however wild; and although the lodge may be concealed by close thickets and overhanging willows, he can generally, at a

single glance, make an accurate guess at the number of its inmates. He now goes to work to set his trap; planting it upon the shore, in some chosen place, two or three inches below the surface of the water, and secures it by a chain to a pole set deep in the mud. A small twig is then stripped of its bark, and one end is dipped in the 'medicine' as the trappers term the peculiar bait which they employ. This end of the stick rises about four inches above the surface of the water, the other end is planted between the jaws of the trap. The beaver, possessing an acute sense of smell, is soon attracted by the odor of the bait. As he raises his nose toward it, his foot is caught in the trap. In his fright he throws a somersault into the deep water. The trap, being fastened to the pole, resists all his efforts to drag it to the shore, the chain by which it is fastened defies his teenth; he struggles for a time and at length sinks to the bottom and is drowned. Upon rocky bottoms, where it is not possible to plant the pole, it is thrown into the stream. The beaver, when entrapped, often gets fastened by the chain to sunken logs or floating timber; if he gets to the shore, he is entangled in the thickets of brook willows. In such cases, however, it costs the trapper diligent search, and sometimes a bout at swimming, before he finds his game. Occasionally it happens that several members of a beaver family are trapped in succession. The survivors then become extremely shy, and can scarcely be 'brought to medicine' to use the trapper's phrase for 'taking the bait.' In such case, the trapper gives up the use of the bait, and conceals the traps in the usual paths and crossing-places of the household. The beaver now being completely 'up to trap,' approaches them cautiously, and springs them ingeniously with a stick. At other times, he turns the trap bottom upwards, by the

same means, and occasionally even drags them to the barrier and conceals them in the mud. The trapper now gives up the contest of ingenuity, and shouldering his traps, marches off, admitting that he is not yet 'up to beaver.'

HOW TO TRAP THE OTTER.

The American or Canadian otter is an animal peculiar to America. It has shining brown fur above and below, much resembling that of the beaver.

It is much larger in size than the European otter, measuring three feet or more from the nose to the tip of the tail, which is about eighteen inches long.

In its habits and food it resembles the European variety. In the winter season it frequents rapids and falls, for the advantage of open water; and when its usual haunts are frozen over it will travel a great distance through the snow in search of a rapid that has resisted the frost. When seen and pursued by the hunters, when it is on these journeys, it throws itself forward on its belly, and slides through the snow for several yards, leaving a deep furrow behind it. This movement is repeated with so much rapidity, that even a swift runner on snow-shoes has much trouble in overtaking it; and, when closely pressed, it will turn and defend itself obstinately. The female brings forth one litter in the year, consisting of two or three young ones at a time.

This otter is found throughout Canada and the United States, and as far south as Brazil; but it is most abundant on the rivers near to the Arctic Sea. There appears to be no difference between the skins obtained on the shores of the Pacific and those around Hudson's Bay. The fur is valuable, and

Fish - Trout Muskrat flesh

varies with the season. In summer it is very short and almost black; in winter it becomes a rich reddish brown, with the exception of the grayish spot under the chin.

The nest, in which these animals spend a good portion of the day, and in which their young are produced, is sometimes made in a bank of earth, or in the trunk of a fallen tree; it is lined with sticks, grasses and leaves, is of large size, and well protected from the rains, and, at the same time, beyond the reach of rising floods. They have a pastime of sliding off wet sloping banks into the water, which is taken advantage of by the trappers to catch them, by placing sunken steel traps in places where the otters are thus accustomed to amuse themselves. They are fond of sliding down hill upon the snow-banks, going on their bellies, feet first, in the manner of school-boys, "coasting" as it is called in New England, entering into the sport with intense eagerness and delight.

Otters are easily tamed when taken young; they are very playful, will follow their keeper like a dog, and become quite familiar, crouching in the lap like a cat. When tame, they eat bread and milk; in a wild state they prefer fish, but sometimes feed on birds and other game.

Otters are usually taken by means of steel traps; the Newhouse No. 3 is especially adapted for this purpose. One of the best places to put a trap for them is to find out the point on the bank at which the animal leaves the water to visit its slide. The otter always chooses for its sliding place a steep, muddy bank, where the water at the bottom of the bank is deep enough to allow it to dive without obstruction; it selects, therefore, for a landing place some neighboring spot where the water is shallow.

The best place for the trap is in the water, at the landing place, just where the otter's hind legs would touch the bottom in order to spring up the bank. The trap must be secured by a chain and ring to a pole, arranged so as to lead the otter, when caught, into deep water. (*See page* 68.) The trap in this position requires no bait. Another good place is the highest point of the slide; or, rather, just before the commencement of it, so as to catch the otter before it spreads out its legs to slide. At this spot a hollow should be made in the ground, to bring the pan of the trap about level with the surface, the whole concealed as naturally as possible in keeping with the ground surrounding it; a dry branch or two may also be so arranged on each side of the trap, as to lead the otter to its more certain destruction. The whole arrangement should be thoroughly wetted by sprinkling water liberally on it with the branch of a tree, to remove all human traces, the otter's sense of smell being exceedingly acute, and the ani- may very shy; and the trap may be made attractive by the application of a few drops of fish-oil, (*see page* 74,) and secured to a post driven in the ground, or other convenient object. Otter-musk is very attractive to the otter; and, if it can be obtained, is one of the best kinds of bait that can be used for trapping it. In winter the otter travels through the snow, leaving a deep furrow or track; a trap sunk in this track will generally succeed in catching the animals. They may also be caught in the water, where it is not too deep, by sinking traps under the holes in the ice, which they make and keep open for their passage in and out of the water. The passage holes are usually at or near the banks, and are very necessary to the otter, whose principal food, especially at this season of the year, is fish.

HOW TO TRAP THE MINK.

The mink has a long, slender body, resembling the weasel in form as well as in activity and voracity. Its color, varying in the different species, is generally a dark brown with a light spot under the throat, but when seen in the woods or fields, the animal appears black. It varies considerably in size, but the average length of its head and body is about thirteen inches.

The fur was once very highly esteemed, but is now comparatively of less value, although particularly fine skins will still command good prices.

The mink of North America is a distinct species from that of Europe or Asia, and is distributed throughout its extent, being most numerous in the less settled parts. It is by no means particular in the choice of its food, refusing scarcely anything in the shape of either fish, flesh or fowl, although it appears to have a more special liking for speckled trout and muskrats. In the marshes it catches and feeds on frogs, aquatic insects, and such shore-birds or animals as it can obtain; in the rivers it will catch any fish that comes in its way, and what it cannot eat at once it carries ashore and hides in holes for a future supply; on shore it will eat almost any living thing that it can kill, and ventures even into the poultry-yard, where it seems to kill just for the sake of slaughter. Its sense of smell is exceedingly acute, enabling it to track its prey with great ease and precision; but it is by no means difficult to trap, its voracity being so largely in excess of any cunning or wariness that it may possess, that an attractive bait will lead it almost anywhere, regardless of consequences. Like most voracious animals, it will devour even its own young. They are produced in May in litters of four to six at a time,

Fish Trout Rabbits Muskrat
Bloody meat

and are jealously guarded by their mothers, until able to protect themselves.

Although the mink is not exclusive as to locality in its wanderings, it prefers small rivers and running streams, leaving hardly a hole unexplored, or a stone unturned, in its thorough search after food.

Minks can be caught in almost any appropriate trap, but a steel trap, of the size of a Newhouse No. 1½, is the one usually adopted. When used in the water, the trap should be set in a shallow place where the water is one or two inches deep, the bait being placed right over the trap, about eighteen inches above it; for this purpose a spot may be chosen where the bank rises straight up from the water's edge. or the bait may be placed in its proper position on the end of a stick. The mink is compelled to stand up on its hind legs or jump upwards to get the bait, and cannot accomplish this without treading on the pan of the trap and being caught by it. If there is deep water near enough, the trap should be secured to a sliding-pole (*see page* 68), but where this is not available, a spring pole (*see page* 68) is advisable, to prevent the mink from falling a prey to any other larger animals.

On the land, the trap may be set in any position which compels the mink either to walk over the trap, or, preferably, to stand up on its hind legs in order to secure the bait. The trap may be placed at the entrance to their holes, or in a hollow, so that it is level with the ground, and lightly covered with chaff, feathers, rotten wood, or even loose earth, with a stick about eighteen inches long planted in the ground, having its upper end, on which the bait is placed, right over the trap, the space behind and on each side being piled up with brush, stones, or anything that will prevent the bait from being taken except from the trap; or it may be laid at

the entrance of an artificial enclosure, or in a passage-way, both of which methods are described on page 70. Traps may be set at intervals, along the banks of a stream, about two feet from the water, properly concealed and baited, and a trail made, either by dragging a dead muskrat or a piece of fresh meat along the ground on the line between the traps, or by sprinkling a track with the mixture referred to on page 75; as soon as a mink strikes any portion of this trail, it will be led by the nose direct to one or other of the traps. The mink is sometimes very methodical in its wanderings, forming regular beaten tracks by repeatedly passing over the same route; these may be recognized by the droppings or dung on them. These tracks always lead to a hole, natural or artificial, and form an excellent location for a trap, sunk either in any portion of the track, just below the level of the ground, and carefully covered with earth, or in close proximity to the entrance to the hole.

The bait may consist of anything of which the mink is particularly fond; pieces of fish or muskrat flesh, or birds' heads, for instance; but the most effective is fish-oil (*see page* 74), the odor of which it will scent from a distance, and seek for eagerly.

HOW TO TRAP THE MARTEN.

The marten varies considerably in different countries; there are, however, only two varieties indigenous to the American continent. The Pine Marten, or American Sable of the fur trade, is generally about twenty inches in length, with a bushy tail eight or nine inches long; its color is brown (varying somewhat in tint), excepting on the throat, which is yellower than the rest of the body. The hair is long, dark and glossy, projecting through,

Rabbits Muskrat Partridge
Squirrels, Birds Eggs

and partially concealing, the under fur, which is thick, short, and very soft. It inhabits the forests across the continent, northward to the 68th degree of latitude, and is also found, though rarely, as far south as New England. It lives in the trees; the females, which are smaller than the males, have their nests in the hollows of the trunks, where they produce their young, from four to seven at a time. The pine marten seeks its food at night, and subsists mainly on squirrels, hares, partridges, mice, birds' eggs, etc., the head of a partridge forming an attractive bait for trapping them. It avoids man, but proves a formidable adversary to other animals; being a match, when at bay, or hard pressed, for a dog, unless the latter has been trained for the purpose. Martens of a very dark color, and therefore highly esteemed, abound in the woods north of Lake Superior; the fur is, however, much inferior to the sable of Russia and Siberia.

The marten is generally caught by means of the Newhouse No. 3 steel trap, set at the entrance of a natural or artificial enclosure (as described on page 70), or in the hollows of trees; and in this case the trap should be concealed by being covered with decayed wood or other matter similar in its character to the surroundings.

The most attractive bait for the marten is either the head of a fish, or of any game-bird, or even pieces of meat.

Like the mink, the marten is very voracious, and will follow in deer-tracks with the hope of picking up some portion of deer meat that may have been left by the wolves, as these latter prey remorselessly on the deer whenever they can be found. A steel trap set in a deer track is very likely to catch a marten before many hours have passed. The marten

may also be traced by its signs in the same manner as stated in reference to the mink, on page 92.

HOW TO TRAP THE FISHER.

The fisher marten inhabits Canada; being also found in less abundance in the northern part of the United States, where it is known as the black cat, or black fox. It frequents low, swampy ground, to which it is adapted by being partially web-footed, and probably derives its name from the fact of fish forming part of its food. It also feeds on rabbits, mice, etc., which it seeks by day as well as by night. This variety of the marten family is known under the name of the Pekan, or Pennant's Marten; its body is longer, affording it a greater degree of agility than the common or pine marten, and is dark brown or grayish brown in color.

They breed in early spring, the young being usually produced in hollows of trees, high up from the ground. The fisher is caught in the same manner as the other martens; but, when caught, it struggles desperately, exerting a strength far greater than would be anticipated from its size. Artificial enclosures (*see page* 70) or any other appliances that may be employed to aid in its capture, require to be strongly constructed; the steel trap (Newhouse No. 1½) should be secured to a spring-pole (*see page* 68), as by this means the captured fisher is deprived of the opportunity of using to any advantage its extraordinary powers both of tooth and limb.

The bait used for this animal consists of the flesh of the muskrat or deer, pieces of fish, or almost anything that forms its natural food. Still further inducements may be offered to the fisher to allure it to the traps, by using the mixture which is prescribed for the purpose on page 75, employing it in the manner there described.

Same as marten

The remarks about the tracks and signs of the mink, on page 92, apply also to the fisher; the mink, marten and fisher being led by their voracity into very similar habits in their search after food, rendering them reckless and incautious, and causing them to fall an easy prey to almost any kind of trap or dead-fall, provided only that they can obtain what their appetite craves.

HOW TO TRAP THE BADGER.

The American badger measures about two and a half feet from the muzzle to the root of the tail, which is five inches more. Its snout is less attenuated than that of the European species, though its head is equally long, and its ears are short and round; the claws of its fore-feet are much longer in proportion than those of the common species, its tail comparatively shorter, its fur of a quality altogether different, its colors very different, and its appetite more decidedly carnivorous than the European varieties; the head and extremities alone are covered with short, coarse hair; all the other parts of the body are furnished with remarkably soft, fine, silky fur, upwards of four inches in length, and differing only in being rather more sparingly supplied on the under than the upper parts. The fur is dark gray at the roots; next a light yellow; and, nearer the ends, black tipped with white. This gives the animal a grayish appearance. There is a white streak extending from the tip of the nose over the forehead, and ending between the shoulders.

Like the bears, the badgers do not lose much flesh during their long winter retirement; for, on coming abroad in the spring, they are observed to be quite fat. As they pair, however, at that season, they soon become lean.

This animal is slow and timid, taking to the first

earth it meets with when pursued; and as it burrows its way through the sandy soil with the rapidity of a mole, it soon places itself out of the reach of danger. The strength of its fore-feet and claws is so great, that a badger, which had insinuated only its head and shoulders into a hole, resisted the utmost efforts of two stout young men, who endeavored to draw it out by the hind-legs and tail, until one of them fired the contents of his fowling-piece into its body.

Early in the spring, when they first begin to stir abroad, they may be easily caught by pouring water into their holes; for the ground being frozen at that period, the water does not escape through the sand, but soon fills the hole, and its tenant is obliged to come out. The American badger appears to be a more carnivorous animal than the European, as in a female which had been killed, a small marmot and some field-mice nearly entire, with some vegetable matter also, were found in its stomach. The badger is quite a cunning animal; and is, therefore, not easy to catch without considerable precaution being taken. The best place for setting the traps for them is at the mouth of their holes, carefully covered; or in the paths which they make in the cornfields. They may also be caught, in the same manner as other animals, in traps laid in enclosures (*see page* 70), or in dead-falls; in this case the bait required may be a mouse or a piece of meat, as anything in the shape of flesh is food for the badger. The most appropriate size of steel trap for catching the badger is that known as the Newhouse No. 3.

HOW TO TRAP THE WOODCHUCK.

The body of the woodchuck is thick and squat, and the legs so short that the belly seems to graze the ground. The color varies in different specimens,

the body being generally brownish-gray above, and reddish-brown below; the head, tail and feet are dark brown; the nose and cheeks ashy-brown. Their length is about eighteen inches, with a tail four inches long. They are fond of sitting erect on their haunches, letting the fore-feet hang loosely down; they maintain an erect position when feeding, bending the head and neck forwards and sideways. During the greater part of the day they remain asleep in their burrows, coming out occasionally to look around; in the evening they go forth and feed on grass, fruits and vegetables. They are seldom found far from their burrows in the day-time; when thus surprised, the woodchuck runs very fast; and, if not seriously frightened, stops and perhaps squats on the ground and looks around slyly to see if it is noticed. In case of extremity it takes refuge in the crevice of a stone wall or rock; and, on being closely approached, utters a kind of chattering, gurgling sound, or, at times, a shrill whistle-like note, for which reason the French-Canadians call this animal a *Siffleur*, or whistler. In defending itself the woodchuck bites severely, and makes a desperate battle with a dog, often with such success as to effect its escape.

It usually walks on all-fours, but occasionally climbs trees and bushes to the height of a few feet, sometimes taking a nap in the sunshine on one of the branches; it cleans and combs its face, sitting on its haunches like a squirrel, and licks and smooths its fur in the same manner as a cat. The hide is loose and tough; the fur is of no value; the flesh is flabby and of rank flavor, and in summer the animal is very fat. Woodchucks become torpid about the latter part of October; they are solitary in their habits, and do not congregate in societies like the other marmots, beyond the members of one family.

It is believed that they eat nothing during their torpidity through the winter season. Their burrows are usually on the slope of a hill, frequently near the root of a tree, sometimes beneath rocks, or in the crevices of stone walls. These burrows extend from twenty to thirty feet from the openings, descending obliquely at first for four or five feet, and then gradually rising to a large round chamber, which is used as the family sleeping apartment. Here also the female rears her young, producing from three to eight at a time, which grow rapidly, and in three weeks may be seen playing around the burrows. The woodchuck is extensively distributed, being found in the Canadas, and thence south to the Carolinas, and as far west as the Rocky Mountains; in some places scarce, in others abundant. In New England they are common among the cultivated grounds, and do much damage in the clover fields, not only eating the grass, but treading it down; they often make great havoc among the pumpkins, and are partial to corn when it is in the milk. The farmers in that section of the country sometimes drown them by filling their burrows with water; they are also shot with rifles, but more frequently are caught in steel traps, set at the mouths of their burrows, and lightly covered with sand or grass, a Newhouse No. 1 or 1½ being well suited for the purpose. In this manner they fall an easy prey, without using any bait.

HOW TO TRAP THE SKUNK.

The common skunk of the United States has a body about seventeen inches long, with a bushy tail, including the long hair, twelve inches. The head is small, the forehead rounded; the body long, fleshy, and widening toward the hips; fur long and coarse, intermixed with long glossy hairs; eyes small, ears

Poultry Smoked fish, Rotten Eggs
mice muskrat

short and rounded; feet broad, and the claws of the fore-feet strong, curved and sharp. Like most of the weasel tribe, its breeding time is about May, six or more being produced at a time. The two anal glands are situated one on each side of the rectum; the sac is supposed to contain about three drachms of the offensive liquid. When this is ejected, the tail is carried forward and laid nearly flat on the back. An experienced person, perceiving this sign of preparation, is always careful to put himself instantly out of shooting distance. It is said that the scent is much stronger if the ejection takes place when the animal is irritated, and that it is also stronger at night than in the day-time. At night the liquid has a luminous appearance, like a stream of phosphoric light. It possesses a very acrid quality, and has been known to render blind dogs and persons into whose eyes it has been thrown. The odor has some resemblance to that of garlic, only intensely and insupportably offensive.

When a skunk is attacked by a dog, it assumes a formidable appearance, by bristling up its hairs and contracting its length into a round form. This menacing behavior, if insufficient to deter attack, is seconded by a repulse far more prevailing; for, from a secret duct, it emits such a fetid effluvium that the atmosphere for a large space around becomes so infected with it, that men and other animals are impatient till they are quit of it. The stench is insupportable to some dogs, and compels them to let their game escape; others, by thrusting their noses into the earth, renew their attacks till they have killed it; but rarely care to have more to do with such noisome game, which for four or five hours distracts them. When care is taken not to soil the carcass with any of the strong-smelling

fluid, the meat is well-tasted, and esteemed a dainty by the Indians.

Skunks have been known to have been made domestic, when brought up young, and prove tame and very active, without exercising the faculty which only fear and self-preservation, perhaps, prompts them to do.

They hide themselves in hollow trees and rocks, and are found scattered over the greater part of the northern continent of America. Their food is insects and wild fruit, and they render good service to the farmer by destroying bugs, worms, grasshoppers, and other field pests; but they will also make free with the poultry and eggs if a fair chance is allowed them.

They are deficient in cunning, and therefore easily caught in almost any kind of trap; the steel trap is far the best, however, on account of the stench which ordinary box-traps are likely to get and retain after being used for this purpose. The steel trap, a No. 1½ or 2, may be set, without bait, concealed at the entrance to their holes; or they may be placed in an artificial enclosure in the fields (*see page* 70), and baited with small pieces of meat, or dead mice; and, under all circumstances, the use of a spring-pole (*see page* 68) in connection with the trap is strongly recommended. Before making use of its terrible battery, the skunk lays its tail almost flat along its back, and at this signal it is about time to "stand from under." If they can be approached stealthily, a blow on the tail end of the backbone with a stick will deprive them of the power to exercise their offensive privileges.

There is hardly a farmer or trapper in the country, but can relate some experiences, amusing or the reverse, in connection with the skunk; and in works on Natural History there are anecdotes enough to

fill a volume, in which this unfashionable perfumer plays a leading part. Even the celebrated Dr. Lyman Beecher once had a practical joke perpetrated on him by one of these animals. The story says that the Doctor, walking home one evening with a heavy quarto volume under his arm, discovered a skunk in his path, which seemed disposed to dispute his right of way; the Doctor, seeing that the skunk was arranging its tail conveniently for action, hurled the quarto at it, receiving in return the animal's best compliments. The plight of the Doctor can easily be imagined, and he did not forget the incident in a hurry.

Some years after, the Doctor was advised to reply to an abusive sectarian pamphlet that had been written against him. "No," said he; "I once discharged a quarto at a skunk, and got the worst of it; no more for me, thank you."

HOW TO TRAP THE GOPHER.

The gopher is an animal about nine inches long, somewhat resembling a large rat, but thicker and stronger built. The head and shoulders are large in comparison with the rest of the body, and the mouth is furnished with two wide incisor teeth in each jaw, by means of which it cuts through roots, etc., with great facility. Its feet have long, strong claws, suitable for extensive burrowing. Its principal peculiarity consists in having pouches arranged on the sides of the neck, which the animal employs for holding and conveying the loose earth when making its burrows, and for carrying food, etc., as occasion requires. They make their burrows branching out in all directions, a little below the surface of the ground, where the roots on which they feed are mostly to be found. When making these burrows.

the animal breaks through the surface at intervals of five or six yards, in order to get rid of the earth which has accumulated in its pouches. It discharges its load, and then continues its burrow, after carefully closing up the hole through which it emerged from, and re-entered the ground. These hillocks of earth serve to show the track of the burrow beneath, and by digging down in line between the hills, the burrow will be found, and a No. 1 steel trap may be set on a level with the bottom of the passage, laying a piece of board over the opening, and rearranging the earth above it; the gopher will be caught in the trap the first time it passes through again.

HOW TO TRAP THE SQUIRREL.

The squirrel is an active little animal found in great variety throughout the United States.

Its hind-legs are longer than the fore-legs, and its joints and spine very flexible, giving it great facility in springing and jumping. Its claws are crooked and sharp, and especially adapted for climbing. Its tail is nearly or quite as long as its body, very bushy, the long hair being parted in the middle all along the under side. The senses of sight and hearing are very strongly developed in squirrels, rendering them constantly on the alert, and, in consequence of their extreme agility, difficult to catch. They differ greatly in size and color in different localities.

The common Red Squirrel or Chickaree is found more or less all over the country. It is small in size, the body being about eight inches, with a tail of some six inches in length. The upper surface is of a red-brown color, the under surface being white. Though easily frightened and rapid in its flight, this species is comparatively tame, and inhabits the surroundings of civilization equally with the solitude

of the forest. Its food is chiefly nuts, small fruit, and grain, laying up in the fruitful season of the year sufficient store for its winter consumption, which it buries in the ground, or hides in the hollows of the trees, the latter also often forming its habitation. Some of these little animals, however, build nests in the clefts of the boughs or other convenient locality, using whatever they find most available for the purpose, feathers, leaves, and twigs. In northern regions, it provides a home for the winter by digging a burrow under the ground.

The common Gray Squirrel exists plentifully in the Middle and Eastern States. It is larger than the Red species, measuring ten to twelve inches, with a tail of about the same length. The upper surface is gray, varying in shade on the neck and feet; the under surface is white, like the Chickaree. In Pennsylvania and Western New York, some few of these animals are of a brownish-black, both black and gray being sometimes found among the young in the same nest.

It lives in nests built in the forks of the trees, exchanging this in winter for a hollow space in the trunk of a tree, and takes its rest in the middle of the day. In the autumn, sometimes the Gray Squirrels migrate in a body to some other locality, devouring everything that comes in their way.

There is another variety of the Black Squirrel, somewhat larger than the Gray, inhabiting the country lying between Lake Champlain and Lake Superior. This appears to be a different species from the Black variety of the Gray Squirrel.

The Red-Tailed Squirrel is peculiar to the Western States. It is about thirteen inches long, of a light gray color above, and a tawny buff below. Its tail is about the same length as its body and of a red color.

In California there are a few species of squirrel which appear to be indigenous to that locality. The Dusky variety is about a foot long, with a tail some fifteen inches. It is dark gray on the back, and a dusky yellow on the sides and belly. The Soft-Haired Squirrel is smaller, being eight to nine inches long; the fur long and soft, of a dark brown color above, and ash-color below. The Woolly Squirrel has a stout body and tail, each about a foot in length; its color is brownish above, and lighter brown below.

The body and tail of the Weasel-Squirrel is glossy black, and about an inch longer than the Woolly variety. The Gray Squirrel is also found in California, rather lighter in color than the common gray species. Some of this kind are found with a red color on the belly.

In Oregon and Russian America there is a peculiar variety called the Downy Squirrel, about the same size as the Chickaree. Its fur is thick and downy, light chestnut color above, silver-gray on the sides, and white underneath. It burrows in the earth.

In the forests of Louisiana there is found the Golden-Bellied Squirrel, about ten inches long, with a tail somewhat longer. In color it is of a yellowish-gray, and a golden-yellow underneath. Another variety, called the Sooty Squirrel, is met with in the swamps of that State, about the same size in body as the Golden-Bellied Squirrel, but with a longer tail. Its back is black, the lower part of the body as well as the legs being a reddish-brown.

The Fox Squirrel is a large variety, sometimes over fourteen inches long, the tail somewhat longer, and subject to many varieties of color. It belongs to the Southern States and is more ferocious than the smaller kinds, and is sometimes more than a match for a small dog.

The Cat Squirrel is found occasionally in the

forests of the Middle States. It is rather smaller than the Fox Squirrel. In color it ranges from light gray to nearly black. The leading peculiarity is in the tail, which is broad and flat.

Squirrels are always actively on the watch, very shy, and therefore difficult to approach; but they are not gifted with a great degree of cunning, and can be caught without much difficulty in traps of almost any kind suited to their size. A No. 0 Newhouse trap placed in the neighborhood of the woods they inhabit, with a bait arranged some seven or eight inches above it, will generally succeed in catching a squirrel; a portion of an ear of corn will serve very well for the bait. If any carnivorous animals are to be found in the same locality, it is better to use a spring-pole (*see page* 68) for securing the trap. This little animal is not of any great value when dead, and it is generally an object to catch them alive. For this purpose some kind of box-trap of appropriate size is required, such as the Rabbit-Trap (*page* 26).

HOW TO TRAP THE RACCOON.

This little animal has a wide range in this country, being abundant as high as the cold latitudes of the fur country, and anything but a stranger in the Southern States. In size the raccoon is somewhat larger than a badger; its fur is of two kinds, a soft full undercoat, and an upper covering of long and rather coarse hairs. The general color is dusky gray, the tint arising from each long hair, belted with white and tipped with black. The face, cheeks and throat are white, with an oblique black dash across the face, which also spreads around the eyes; the tail has four or five dusky black rings; the length is about two feet, of which the tail is eight

or nine inches. The raccoon climbs with the greatest skill, in the manner of a bear—ascending or descending a tree with the utmost freedom. When pursued it often takes refuge in a tree, but its destruction is then a sure thing, hence the saying, when anyone gets in a tight place—he is a *tree'd coon.* The raccoon is very fond of anything that is sweet, and commits great ravages on fields of corn and plantations of sugar cane, and is not less destructive to poultry. It frequents the margin of rivers, creeks and swamps, and feeds upon frogs, crabs and oysters, in catching which it exhibits great dexterity.

The raccoon is an animal of large resources and marked character. It goes prowling about as well by night as by day. It is a fisher, a hunter, a trapper, a reaper, or a fly-catcher, as the opportunity presents itself to its ever-watchful observation. It is, by instinct, cunning as the fox, inquisitive and meddlesome as the monkey, greedy as the mink, and stealthy as the cat. In northern climates, on the approach of winter, the raccoon retires to his home and sleeps like the bear till spring, or only goes abroad occasionally in fair weather. At the South, it is active throughout the year. Its nest is usually made in the hollow trunk of a tree. From four to six young ones are produced at a birth, this event taking place in May. The young coons are about half as big as a rat, and utter a plaintive wail like an infant. The print of a raccoon's paw also bears a remarkable resemblance to the impression made by the bare foot of a young child.

This animal is easily tamed, and becomes an amusing but troublesome pet. It uses its fore-feet like hands, and is an expert pickpocket. It will follow its master even along the streets of a town;

it is, however, perpetually peering about, and its inquisitiveness becomes vexatious.

Raccoon hunting is a favorite sport in some parts of the country. The hunts usually take place by moonlight, dogs being used to tree the game. Great experience is required, as these creatures are nimble and cunning, often baffling the most skillful hunters. With all their cunning, these little animals are caught in various kinds of traps. The best way of trapping the raccoon is as follows: Take a steel trap, Newhouse No. 2 or 3, set it on the edge of the water, one and a half inches below the surface, being careful to chain the trap to a stake. Hang the bait, which may be a fish, frog, or part of a bird, over the foot-plate of the trap, about two feet high. When the raccoon sees the bait it will jump for it, and when it comes down it will get its paws in the trap. This animal may also be trapped in the corn-field; this is best done by placing a trap where the animal has made a path. It may also be caught by any of the plans recommended for securing the mink (*see page* 91).

HOW TO TRAP THE OPOSSUM.

The opossum of the North American continent is an animal about the size of a cat, but more resembling the rat in its form. The head is pointed, the jaws wide and furnished with sharp teeth, the ears large and naked, the eyes small, and the tail long and flexible. Its fur is soft and woolly, dark at the ends and light colored underneath, giving the animal a grayish appearance; the face is white and the ears black.

It is very prolific, the female producing three or four litters in the course of the year, each litter consisting of from six to thirteen young ones. It is

Poultry Rabbit, Muskrat Tainted Mea

furnished with an ample number of nipples, situated at the lower part of the belly, and covered with a kind of sack or bag, in which it carries its young until about five weeks old; they then travel along with the mother, holding fast with their tails to her legs and tail. The opossum climbs trees with great agility, frequently hanging by the tail from the branches. It feeds on nuts, insects, small birds, eggs, etc., seeking its food in the trees at night. It has a remarkable way of feigning death when caught or wounded, "playing 'possum" in a manner and with a persistency calculated to deceive the most wary.

Opossums are mostly found in the Middle, Southern and South-western States, where the climate is exempt from the severity of the northern winter.

They may be caught by setting traps in their haunts, baited with corn, mice, or anything they are fond of. They sometimes visit hen-roosts, and can be caught at the entrance by the trap described on page 71. A Newhouse No. 2 or 3 will answer very well for trapping any ordinary sized opossum.

HOW TO TRAP THE FOX.

The fox is not confined to the colder regions of our country, but is found in the most Southern States, where its peculiar characteristics and habits are unchanged. On comparing a fine specimen of the English Fox with an American or Red Fox, each has been observed to have dark markings on the sides of the muzzle, posterior parts of the ears, and fore parts of the legs; the tails of both have an intermixture of black hairs, and are tipped with white. The American Fox, however, differs in its long and very fine fur, and in the brilliancy of its colors. Its cheeks are rounder, its nose thicker and

Rabbits mice muskrats, Poultry Partridge Fish

shorter, its eyes nearer to each other, its ears are shorter, and the hair on its legs is a great deal longer than the English variety. The American Fox has a much finer brush than the European, and is altogether a larger animal. The Black or Silver Fox in its most perfect state is entirely a pure shining black, with the exception of the tip of the tail, which is white. Its fur is very beautiful, and commands a higher price than any other fur produced in this country. It inhabits precisely the same districts as the preceding species, but is much more uncommon. The senses of foxes are acute, especially those of hearing and of smell; their limbs are exceedingly pliant, and their tail is so flexible that they can roll it round their nose. They are shy, cautious, exceedingly cunning and patient, cleanly and retired. Their recourses of instinct to escape detection or elude an enemy are numerous, never trusting to their courage until they are exhausted, and then defending themselves to the last gasp against dogs, but sometimes deceiving mankind by simulating death; depositing their prey under ground, and in different places, and not attacking poultry under any circumstances, *so long as it is kept chained.* As the dusk of evening advances, the fox generally steals from its burrow, with noiseless steps, to prowl about for prey. With senses of smell and hearing extremely keen, it listens and sniffs the breeze. Alive to every sound and odor, its eyes gleam as it creeps along in a crouching attitude.

Stealthy in all its movements, it surprises the rabbit gamboling near its burrow, and the poultry on their perch. It slaughters all it can, and buries the overplus in the earth for the future. Solitary in its habits, the fox dwells alone in a burrow which it has either made or usurped. It is generally in some secluded situation, not readily discovered, and

in the neighborhod of a farm. The fox is a difficult animal to trap, because of its extreme wariness and cunning.

There is no scarcity of well-authenticated instances of this animal's cunning. One of recent occurrence will suffice. A farmer possessed a large number of fine turkeys, which usually roosted in the branches of some tall Scotch firs, immediately adjoining the farm-yard.

Reynard had an eye on them, and made several visits during the moonlight nights, but unsuccessfully, as they were perched too high for him to reach them. He was, therefore, obliged to resort to stratagem, and this was the plan he adopted: He first scratched the ground beneath the tree with his fore-feet, and then the base of the tree itself, in order to attract the attention of the turkeys, at the same time looking up to mark every movement. He then ran round the tree in rapid rings. The turkeys, aware of their danger, followed his quick movements with their eyes, and became confused and dizzy. One fine bird fell to the ground, was instantly killed, and carried off to the earth. The scheme was repeated, with equal success. The loss of turkey after turkey induced the farmer to watch in ambush, and the truth of the stratagem was fully established; but the cunning animal paid the forfeit of his own life, for he was shot dead while decamping with his last booty.

There is no end to the stories told illustrating the sagacity and tricky devices of the fox, but enough has been given to show its general character, and introduce Reynard and his slippery ways to the amateur trapper. The object here is to give only enough information regarding the habits and haunts of the different animals as will guide the novice in trapping them, and remove, as far as possible, the

obstacles which, in the case of the fox especially, are calculated to lessen the chances of success.

One of the most important things when about to trap a fox, is to have the trap perfectly clean. The word clean, in this sense, does not allude to freedom from rust, for no good trapper will allow his trap to become rusty, but means that the trap should be entirely free from *human scent.* In order to avoid this, the trap must be thoroughly washed in weak lye, and when dry, well greased and smoked over burning feathers. It has already been said that the fox has a very keen scent, but it is particularly shy and scary at the least odor of the human body. It is therefore necessary, when handling the trap, to employ clean buckskin gloves, and unless this important precaution is observed, success is very improbable.

The next step is to make the bed for the trap, and although there are various ways of doing this, the following is believed to be the best method:

The bed should be about three and a half feet in diameter, and made of wheat, hay or buckwheat chaff. Some trappers make the bed of wood-ashes, but any of the above will be found better, and the buckwheat, probably, best of all. The ground upon which the bed is made, should be hollowed out in the center, so as to admit the trap, and the bed should be made as hard as possible, and deep enough to cover the trap, and at the same time be perfectly level with the ground.

When the bed is made as directed, take the trap (which should be a Newhouse No. 2, and have a chain and clog attached to it) and place it in the hollow in the center of the bed. Set the trap, put some of the chaff inside the jaws, as high up as the pan, cover the pan with paper, so that the chaff will not prevent its working freely, and then cover the

whole with chaff, and level it off, so that the fox will not suspect a trap to be there; and finally bait it with fresh meat or cheese. Do not tramp about the bed more than is absolutely necessary, and cover up all foot-tracks as much as possible. Some trappers smear the traps with assafœtida or melted beeswax, and others use a few drops of the oil of rhodium. These are all good, and may be employed for the purpose of deceiving the fox, particularly with a regular cunning old fellow, after all other stratagems fail. Another good plan is to bait the bed several times before setting the trap, until the fox begins to think that this is the best place it ever knew to find a choice morsel ready at all hours; when a proper degree of confidence appears to have been established, then put the trap in its place, and catch him—if you can.

As already intimated, the fox will attack a hen-roost or poultry-yard, as long as it has free use of its limbs, and as often as its strength lasts. A peculiarly ingenious contrivance is given on page 71, which *ought* to catch even a fox.

HOW TO TRAP THE WOLF.

In former times, when America was first colonized, wolves were very numerous, and gave the early settlers considerable trouble in guarding against the depredations and damage caused by the attacks of these animals.

They have now, however, disappeared from the settled parts of North America, being found only in the far West, and in such districts as have not yet been fully reached by civilization.

There are several varieties of the wolf to be met with on this continent.

The common gray wolf measures about twenty-

eight inches in height, to the top of the shoulder; and in its general proportions, similar to a large dog. Its color varies from a yellowish gray in the middle latitudes, to nearly white in the far North, and is the same, in most respects, as the common wolf of Northern Europe; the muzzle is darker colored or black, the chin and upper lip being almost, and sometimes quite, white; its tail is bushy; and its hair, which is coarse, is longer around the neck and haunches than on the rest of its body.

These wolves roam in herds on the sandy plains east of the Rocky Mountains, where they prey upon young and feeble bison, deer and other animals.

The Prairie Wolf is smaller than the Gray; in color it is a reddish-brown, and lives in burrows, from which fact it is sometimes called the Burrowing Dog; it is also known by the name of the Barking Wolf, from its peculiar bark. This variety is rarely seen except in the sandy plains of the far West; their food consists of birds and the carcasses of such animals as fall in their way. The Red Texan Wolf is similar in color to the Prairie Wolf, but equal in size to the common gray species, which it also resembles in its wild habits. It exists only in, and south of, the latitude of Texas.

There is another smaller, and less ferocious variety of the wolf peculiar to Mexico. It is light gray in color, and called the Coyote or Cayoth.

The wolf may be caught in various ways. An attractive bait will allure them into any fair sized dead-fall (*see page* 11); or they may be secured in a steel trap of medium size, attached to a clog, as shown on page 67. The trap may be placed at the entrance to an enclosure of appropriate size (*see page* 70).

The wolf is very shy, and almost as cunning

and quick-scented as the fox; it requires considerable care, therefore, to trap them.

The traps must be handled with gloves, and very carefully concealed, and the arrangements all made to appear as natural as possible, and not bear any marks or traces of human interference; the scent and even foot-prints of man being easily distinguished by these animals. They are strongly attracted by the odor of sweet-fennel, which may be sprinkled in a powdered state around the traps, to overcome human traces; the oil of rhodium is also successful in luring the wolves to any spot where it may be placed; and it is said that some trappers use this oil on the soles of their boots, in order to cause the wolves to follow their tracks, which are purposely made in the direction leading to the traps.

Wolves are easily killed by poison. A small quantity of strychnine mixed with lard, smeared on slices of meat, and the meat then rolled up so as to hold and conceal the poison, will kill a wolf within a few moments after swallowing it, and before it can get many yards away. The poisoned baits may be laid around in places where wolves are likely to prowl; or the animals may be attracted from a considerable distance by the smell of blood taken from any fresh-killed beast or bird, and judiciously exposed in the neighborhood of traps and baits. Poisoning is often resorted to when wolves are found to make havoc among sheep or committing depredations in the farm-yard; but the use of it is detrimental to the fur, having a tendency to loosen it, and is, consequently, not advisable when the animals are trapped for the sake of their skins. The same remarks apply equally to the fox, and other fur-animals of the kind. As the wolf is just as slippery a fellow to catch as the fox, it is as well to be sure that, when once secured, it cannot get away again;

a No. 4, double-spring Newhouse trap will offer an effectual check-mate to its struggles and wiles combined.

HOW TO TRAP THE BEAR.

The Grizzly Bear is a formidable animal, sometimes measuring as much as eight or nine feet in length. Its body is heavily and solidly built, with a very short tail; its neck thick and massive; its legs short, and its feet furnished with strong, sharp claws, strongly curved on the fore-feet, and five or six inches long. The muzzle is projecting and flattened, the jaw is armed with a row of strong teeth, the tusks or eye-teeth being highly developed. The hair is long, coarse, and varying in color from a tawny yellow to a brown-black, generally darker on the legs, and lighter on the face; the color, when young, is quite dark. This species is not well adapted, when full grown, for climbing. It inhabits the regions around the Rocky Mountains, and northward into the western part of British America. It feeds on any animal it can seize; and, as its strength is enormous, there are few that are exempt from its attacks.

The Black Bear is common to all those parts of North America that have as yet been only sparsely settled, excepting in the regions referred to above, where it is replaced by the grizzly bear. It is much smaller than the last named, rarely exceeding six feet in length, and clumsily formed. The claws are in a great measure concealed by the hair.

The black bear is covered with soft, glossy, black hair; the cheeks are fawn-colored, with sometimes a streak of the same down the chest. A variety of this species is sometimes of a yellowish or reddish color, and known as the Cinnamon Bear. In Carolina this bear is found of a yellow color. The Bar-

Fresh meat. Honey. Apples

ren Ground Bear of Northern British America is also another variety of this species. Its food consists of roots, insects, eggs, and such birds or animals as it is able to obtain; preferring, however, berries or vegetables when it can get them. It is not nearly as ferocious as the large grizzly kind, but is an excellent climber; and hibernates under the snow in the northern climates. In warmer regions, it shelters itself in winter in the hollows of large trees.

Their young, as is the case with bears in general, are remarkably small, varying from one to five at a birth, which event takes place in January.

It requires a steel trap of the largest size to trap the bear; the Newhouse No. 5 is made expressly for bears of small size, but for a large animal a No. 6 will be indispensable; the trap must have a short chain, attached to a clog (*see page* 67), the weight of which must be in accordance with the kind of bear found in the locality.

The bear is a furious animal when hurt or caught in a trap, and would soon succeed in breaking almost any trap if the chain were long enough to allow it. The best position for placing the trap is at the entrance of an enclosure, constructed in the manner described on page 70, but made strong and roomy enough to suit the large size of the animal.

Trappers generally select, if possible, some spot between trees or logs which can be improved upon, and made to answer their purposes with far less trouble and labor than would be required to construct a regular enclosure; the object in view being to oblige the bear to tread on the trap in order to reach the bait. Bears appear to be endowed with a very small share of cunning, and will enter any nook or corner to gain possession of a piece of meat of almost any kind; they are fond of sweets, and are

strongly attracted by the smell of honey. A little honey or a piece of honeycomb will draw a bear from a considerable distance; and, if this be placed near the trap, to bring the bear within scent of the meat, its capture is almost certain.

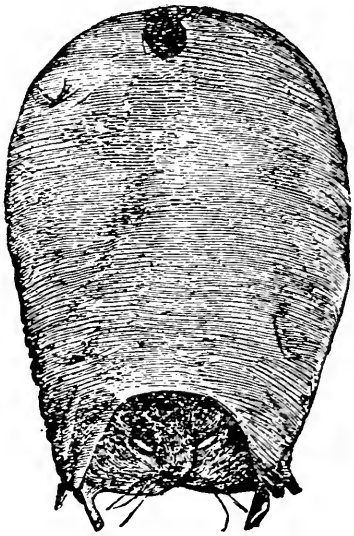
In winter time a bear may sometimes be tracked by its footsteps to the den or hole in which it dwells, where a fair shot may be had at it. Shooting bears is, however, dangerous sport, as they are difficult to kill, and are very formidable when enraged, and the hide is also injured by the ball.

HOW TO CURE SKINS.

The marketable value of fur-skins mainly depends, of course, on the quality and kind of the fur; but even the best skins will fail to command a fair price unless they are properly cured and prepared for the furrier or tanner. In order to arrive at this result, the amateur trapper will need directions for removing the skin from the animal without spoiling it by unnecessary incisions; and also for treating the skins, when removed, in the manner which will best fit them for mercantile purposes.

There are various ways for curing small skins, the simplest being to tack it, fur inwards, onto a board well stretched, and allow it to dry where it is not exposed to the sunshine or the heat of a fire. Some prefer to stretch the skin, turned inside out, over a strip of any elastic wood, such as hickory, birch, elm, etc., the edges of the skin being secured in notches cut into the bow, as seen in the accompanying illustration. For curing in this manner a muskrat skin, for instance, the feet are first cut off; the skin is ripped with a knife from the center of

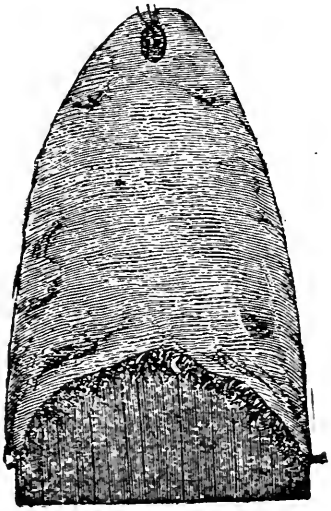
the under-jaw down the middle of the belly, a little beyond the holes left by the fore-legs; the skin is next cut loose around the lips, ears, and eyes, and finally stripped backwards off the body. Stretching on a bow is not generally a good plan, as it draws the skin out of its natural shape, the usual implement used for curing small skins being the board



stretcher, as it is light and portable. It consists of a piece of board, one-fourth or three-sixteenths of an inch thick; in length about eighteen inches or more; and six inches in width at one end, slightly tapering to the other end, which is rounded off to an oval with a blunt point. At the broad end, notches are cut, in which the edges of the skin, when stretched on the board, are secured.

An improvement on the foregoing requires a little more trouble in its construction, which is as follows: Prepare a piece of light board, about three-eighths

of an inch thick, somewhat more than two feet long; three and a half inches wide at one end, and tapering to a little over two inches wide at the other end; the narrow end is rounded, and the rounded edge beveled off. It should then be gradually thinned off in its entire length, from the center to each side, so that the edges become tolerably thin, the center retaining its original thickness. Next saw the board



exactly down its center. A stretcher or wedge is made of the same thickness of wood, one inch wide at one end, and three-eighths of an inch wide at the other, the same length as the other board. The two halves of the board are inserted in the skin, the wedge is then introduced between them, and being driven in, stretches the skin thoroughly. These stretchers are made of different sizes, with the same proportions, to suit the various kinds of skins, the one just described being suitable for mink and other

animals of like size. Otter skins will require a stretcher nearly three times as large. When using these board-stretchers, the skin should be ripped along the back of the hind legs up to the vent; having cut the edge of the skin loose around the vent, strip it from the tail, and draw the whole carefully forward, peeling it off the animal towards the head, which is the last place to be skinned. The skin is now like a long pocket, the fur side inwards, and ready for the insertion of the stretcher.

In removing the skin from the otter, and other wide-tailed animals, it will be necessary to rip the skin along the under side of the tail, and open it out stretched flat on a board.

The skin of the deer, and of some other animals, is cured by being laced with twine to the inside of a hoop, and kept drawn tight as a drum until dry. The hoop is made of hickory, or other flexible wood, and large enough to stretch the skin.

HOW TO TAN SKINS.

For the benefit of those who desire to tan fur skins for their own use, a few general directions are here given, which will be found amply sufficient for all ordinary purposes.

HOW TO TAN MUSKRAT SKINS.

Before a skin can be subjected to the process of tanning, it requires some preliminary preparation. This consists, first of all, in washing the hide in warm water, in order to cleanse it thoroughly; after which all fatty and fleshy matter must be carefully removed.

The next step is to prepare a liquor by mixing together the following ingredients:

10 gallons cold soft water.
8 quarts wheat bran.
½ pint old soft soap.
1 ounce borax.
1 pint salt.

Soak the hides in this liquor for eight or ten hours, if they are fresh; or until very soft, if the hides have been previously dried. The salt must be omitted if the hides have already been salted; and the addition of two ounces sulphuric acid to the liquor will prepare the skins in about one-half the time. The hides will then be ready for the tanning liquor, which is made of the following materials:

10 gallons warm soft water.
½ bushel bran.
2½ pounds sulphuric acid.

Stir the bran into the water until thoroughly mixed, and let it stand in a warm room until it ferments. When this takes place, add the sulphuric acid by degrees, and with constant stirring. Soak the musk-rat skins in this for about four hours; then take them out and rub them with a fleshing knife. A good substance for a regular fleshing knife may be made by taking off or rounding the edge of an old chopping knife. In order to render the skin soft and pliable, it must be rubbed over a smooth beam until dry.

HOW TO TAN RABBIT SKINS.

Lay the skin on a smooth board, the fur side undermost, and fasten it down, tightly stretched, with tinned tacks. First wash it over with a solu-

tion of common salt; then moisten the surface all over with a sponge dipped in a solution consisting of

1 pint warm water.
2½ ounces alum.

Repeat the sponging occasionally for three days. Then, when the skin is quite dry, take out the tacks, roll it loosely the long way, hair inside, and draw it quickly backwards and forwards through a large smooth ring until quite soft; unroll it, and roll it again the opposite way, and repeat the operation.

HOW TO TAN ALL KINDS OF SKINS.

The following is a method applicable to all skins with the fur on: First trim off all useless parts, then remove all fatty matter from the inside. (If the skin is dry, it must first be softened by soaking.) Next soak the skin for an hour in warm water. After this, spread over the inside of the skin, by means of a brush, a coating of the following mixture:

1 ounce borax.
1 ounce saltpetre.
1 ounce glauber salts (sulphate of soda).
Water sufficient to make a thin paste.

The coating should be heavier on the thicker parts of the skin; double the skin together, coated side inwards, and put it away in a cool place. At the end of twenty-four hours, apply, in the same manner as before, a coating of a mixture consisting of

1 ounce sal soda.
½ ounce borax.
2 ounces hard white soap.

Melt these together slowly by heat, without allowing the mixture to boil. After coating the skin with the above, fold it together again as before, and put it in a warm place for another twenty-four hours. At the expiration of this time, take

4 ounces alum.
8 ounces salt.
2 ounces saleratus.

Dissolve these in hot water sufficient in quantity to saturate the skin; when cool enough not to scald the hands, soak the skin in it for twelve hours; then wring it out, and hang it up to dry. The soaking and drying must be repeated two or three times, until the skin is sufficiently soft. Lastly, smooth the inside with fine sand-paper and pumice stone.

AMATEUR TAXIDERMY

A moderate knowledge of practical taxidermy necessitates two essential qualifications: first, a touch both gentle and delicate; second, some knowledge of natural history and anatomy. A badly prepared bird or animal is worthless as a specimen, and a ghastly object to behold. The last mentioned appellation will, we have no doubt, be peculiarly applicable to the result of our reader's first effort after he rises from the perusal of the lines below. We do not say this in order to discourage such attempt—far from it—but merely to insinuate, in advance, that the practice of the art is not half so easy as it appears from the simple description of the various processes. Skill is only to be gained by study and practice, and the path to perfection is sure to be thickly strewn with monstrosities in astonishing variety; but when once a certain degree

of deftness is attained, the student will find that an occasional ramble through the woods, with a light shotgun for company, will be sure to produce enough interesting specimens to keep him amused, as well as instructed, during many of the long winter evenings. We are enabled, by the courtesy of professional taxidermists,* who stand unexcelled in their art, to offer for the guidance of the tyro sufficient

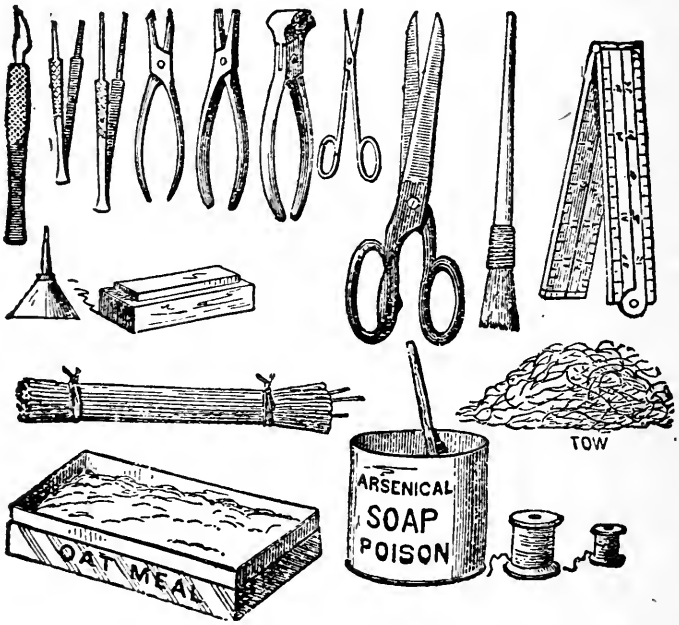


FIG. 1.

details and practical advice to make him, with care and attention on his part, a proficient in this interesting as well as ornamental occupation for his leisure hours.

The very best subject to begin with is a small chicken. Not that a stuffed chicken is an object of

* Messrs. Uprich & Riedel, New York.

extraordinary beauty, or at all suggestive of anything in particular, but because it is easy to get, and has a moderately tough skin. Besides, if we are economically inclined, the meat need not be wasted. Do not begin with a canary, or any other small bird, but stuff several chickens first, or animals of moderately large size.

We will suppose, now, that the student is seated at his work-bench. A defunct pullet elevates its rigid claws in the air before him. He has rolled up his sleeves, and is about to make his initial incision. Before he does so, let us look over his kit of tools. Our artist has sketched them all in Fig. 1. First, there is the scalpel. This can be purchased for a small sum from any maker of surgeons' instruments. The blade is short and very sharp, while the handle (not joined) is long enough to allow of a firm grasp. From the same maker, a couple of pairs of surgeons' scissors should also be obtained, one quite small and sharp-pointed, the other of medium size; also two or three spring forceps of various dimensions. A small pair of pliers for clipping wire is required, some spools of cotton (Nos. 10, 30 and 100), a quantity of excelsior and tow, some cotton batting, a little prepared glue, a number of straight pieces of wire about fifteen inches long, and size No. 20 or thereabouts, a box of dry oatmeal, and some arsenical soap. This last can generally be obtained of druggists, or, if not, can be made as directed on page 133.

If the bird has been shot, all the holes made in its body, as well as the mouth, should immediately be plugged with cotton, in order to prevent the escape of blood or liquids. Operations should not be begun for twenty-four hours, so that the body may have ample time to stiffen and the blood to coagulate. It is well, during this period, to inclose the bird, head

downwards, in a cone of paper, so that the feathers will be held smooth. (*See Fig.* 2.)

The first process is skinning, and it is in this operation that delicacy and neatness is required. In commencing, the left hand is used to part the feathers, exposing the skin from the apex of the breast-bone to the tail. With the scalpel held like a pen, a free incision is made between these points, as shown in Fig. 3, care being taken to divide the skin

FIG. 2.

only, without cutting into the flesh. The skin is then pressed apart, and oatmeal dusted into the cut, in order to absorb any fluids which may escape. Careful lifting of the skin clear of the flesh follows, until the leg is reached, when the scalpel is again used to disarticulate the thigh joints. The bone of each thigh is then exposed for its whole length, by pushing back the skin, and the meat removed, when the bone is replaced, and the other thigh treated in similar manner.

The skin is next detached, to the wings, which are cut from the body at the joint next the same, and the bones scraped clear of meat. Then the neck is divided, so that the skin, with the head attached, can be peeled from the entire body clear to the root of the tail. The last is bent toward the back, with the left hand, the finger and thumb keeping down the detached parts of the skin on each side of the

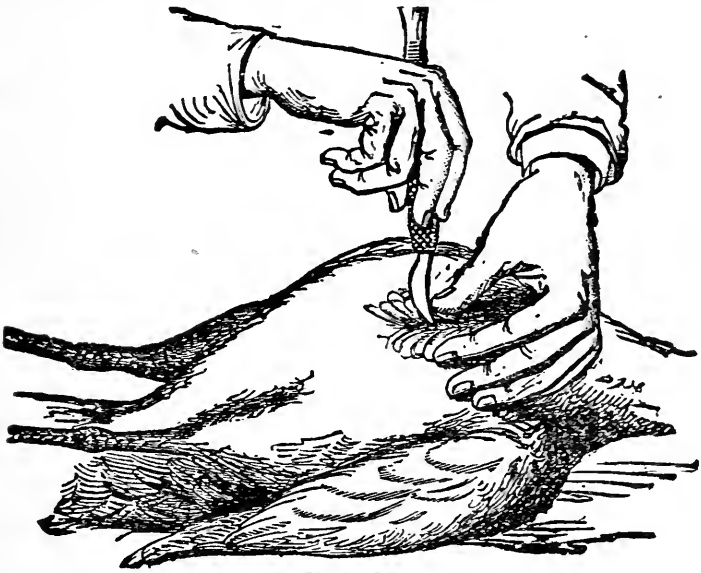


FIG. 3.

vent. A deep cut is then made across the latter, until the back-bone, near the oil gland at the root of the tail, is exposed. Sever the back-bone at the joint. This detaches the body, which may be removed and thrown aside, while the root of the tail, with the oil gland, is left. Great care is needed in this operation, as, if not enough bone be left at its root, the tail will come out; but all fleshy matter should be neatly dissected away.

The neck now requires attention. This need not

be split or in any wise cut. The skin is merely pulled over the flesh, as a glove is removed from the finger, until the skull is exposed and appears as in the sketch (Fig. 4). With the point of the knife remove the ears; and on reaching the eyes, carefully separate the lids from the eyeballs, cutting neither. It requires very delicate and slow work at this point, so as not to injure the eyelids. Then scrape out the eye cavities, and cut away the flesh of the neck,

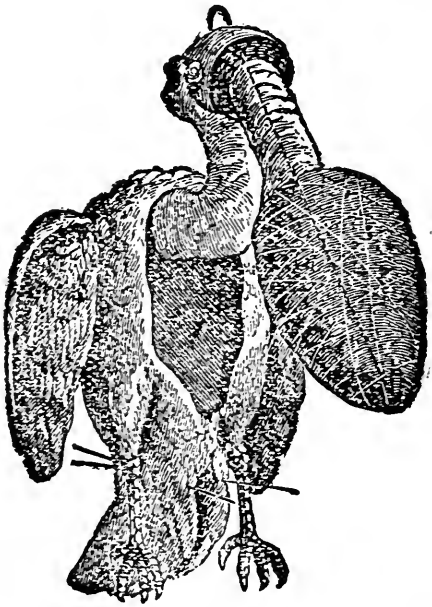


FIG. 4.

removing, at the same time, a small portion of the base of the skull. Through the cavity thus made extract the tongue and brains, and after cleaning away all fleshy matter, paint the eye orbits with arsenical soap (*see page* 133), and stuff them tightly with cotton. Care should be taken not to detach the skin from the bill, as it is necessary to leave the skull in place. Finally, fill the interior of the skull

with tow, after coating internally with the prepared soap.

Cotton, it should be understood, will not answer as a material for stuffing any portion of the body

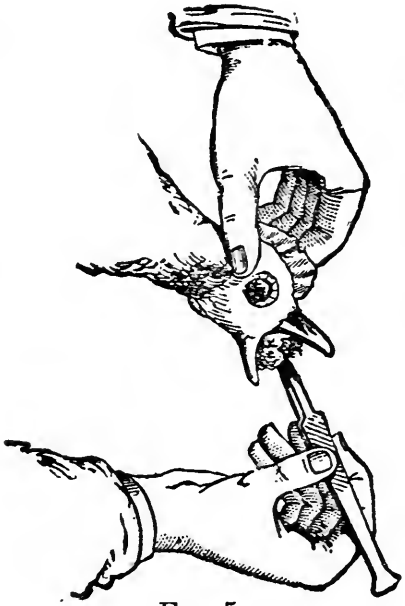


FIG. 5.

through which, subsequently, it may become necessary to pass needles or wires. It packs too hard, and therefore tow or excelsior must be employed.

The skinning operation being now completed, the stuffing is next proceeded with. To prepare for this, the bird, before being skinned, should have been measured, first as to its girth about the body, and second as to its length from root of tail to top of skull, following the shape of the form. From these data an artificial body of the right dimensions is constructed and inserted as follows: On a piece of straight wire, equal in length to the last measure-

ment above mentioned, a bunch of excelsior is secured by repeated winding with stout thread. This bundle, which is represented in our Fig. 4, is molded to a shape resembling that of the bird's body, and its girth is regulated by the similar measurement already obtained from the bird itself. As will be seen, it is attached at the end of the wire, the long protruding portion of which serves as a foundation for the neck. The extremity of the wire is clipped by the pliers to a sharp point, and then forced diagonally upward through the skull, on top of which it is clinched flat. Cotton batting is then wound about the wire between skull and body, until sufficient thickness is obtained to fill the skin of the neck. The position of the various parts at this point is represented in Fig. 4. Painting the inside of the skin with arsenical soap follows, and then the skin is drawn back so as to envelop the false body, and a needle and thread is thrust through the nostrils to make a loop for convenience in handling.

The finest pair of forceps is employed to pull the eyelid skin into place, to arrange the feathers, and to pull up the cotton in the orbits so as to stuff the cavities out plumply. More cotton is next pushed down the throat until the same is entirely filled. (*See Fig.* 5.) Two pieces of wire—quite stout for large birds—are then sharpened at one extremity. Taking the wire in one hand and guiding it with the other, the operator shoves it into the leg, from the ball of the foot up alongside the thigh bone, the skin being turned back for the purpose. Cotton is then wound about both wire and bone, in order to fill the thigh out naturally, and the same process is repeated for the other side. The ends of the wire below are left protruding, in order to support the bird on a perch, if such is desired. The upper ends are pushed clean through the artificial body, from below up, and

clinched on the upper side. This secures the legs, which are afterwards bent in natural position. (*See Fig.* 5.)

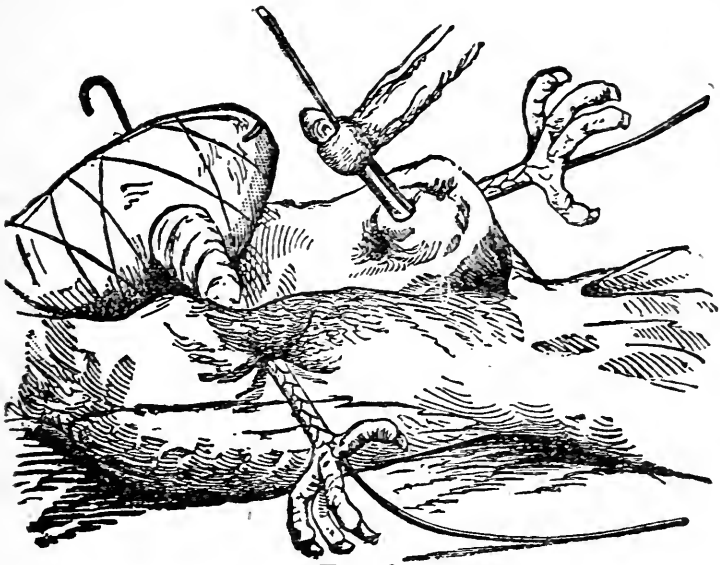


FIG. 6.

The bird can now be set up; that is, the wires stretching out below the claws can be wound about a perch, or pushed through holes in a board and clinched on the under side. In the latter case, it will be necessary to spread the claws and fasten them with pins. For small birds, the cut in the breast need not be sewn up; a chicken or larger fowl will require a few stitches to hold the edges together. If the tail feathers are to be spread, a wire is thrust across the body and through each feather, holding all in the proper position. The wings are then gathered closely in to the body, and two wires, one from each side, are pushed in diagonally from up, down, and through the skin of the second joint (Fig. 7). The wings are thus held, and

the wires, as well as that through the tail, are left protruding for an inch or more. A touch of glue within the eyelids prepares the latter for the eyes. These must be purchased from taxidermists, but for small birds common black beads will answer. If plain glass beads can be obtained, by the aid of a little paint the student can easily imitate the eye of a chicken. After the eyes are inserted, a sharp needle is used to pull the lids around them and into place.

The operator must now, with a fine pair of forceps, carefully adjust the feathers, smoothing them down with a large camel's-hair brush. This done, thread must be wound over the body very loosely, beginning at the head, and continuing until all the feathers are securely bound. The bird is then left to dry for a day or two, when the thread is removed, the ends of wire cut off close to the body, and the work is complete.

Stuffing animals requires less delicacy and care to avoid injuring the skin than with birds, but necessitates a closer knowledge of the form and natural position. The mode of skinning and stuffing is the same, except that the neck is cut down, as the head cannot, of course, be drawn through. This last is also the case with ducks, woodpeckers, and other slender-necked birds. In preparing deers' heads and antlers, the skull is best taken in, as it can be secured on a piece of wood, on which the neck can be built up. In skinning the head, the incision should be made on the back of the neck, and care should be taken completely to fill all cavities of the skull.

We should advise amateurs in this interesting art to endeavor to give an aspect of life to their productions, by grouping them, or placing them in odd, though natural positions. For instance, a chicken

can be easily placed as in the act of picking up food or crowing—any position will be better than stiffly standing erect. Similarly, animals can be represented attacking prey, fighting, or playing. A very fine group, now in the Central Park Museum, in

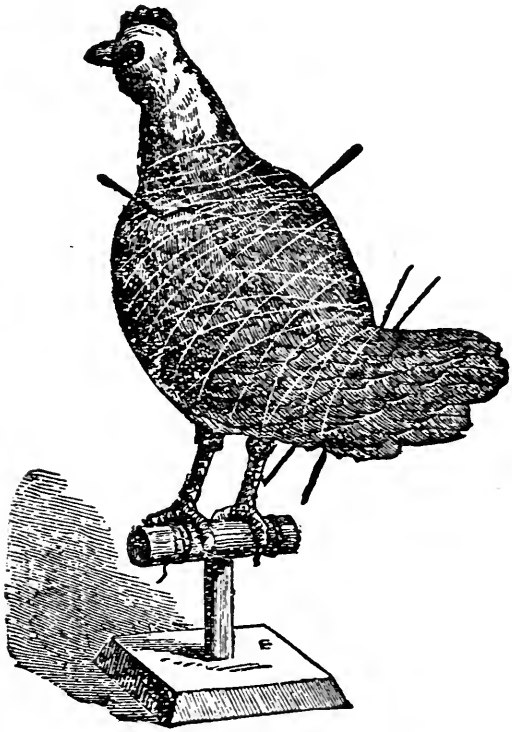


FIG. 7.

New York, representing an Arab mounted on a camel and attacked by lions, will exemplify our meaning. All the animals in this group are superbly prepared and placed, though, of course, such a work requires a skilled naturalist as well as taxidermist. It is worth careful study.

ARSENICAL SOAP FOR TAXIDERMISTS.

Arsenical soap is made from the following ingredients:

3 ounces carbonate of potash.
1 ounce white arsenic.
1 ounce white soap.
1 ounce air-slacked lime.
$\frac{3}{16}$ ounce powdered camphor.

Combine these thoroughly with sufficient water to form a thick paste, and apply it with a small paint brush. The pot in which this mixture is contained should be marked "Poison," and kept out of harm's way.

FLUID ARSENICAL SOAP.

A preparation, similar in composition to the foregoing, is made from the following:

1 pound soap.
6 ounces carbonate of potash.
2 ounces chalk.
1 pound arsenious acid.
3 ounces camphor.

Cut the soap into thin slices, put it with a little water into a pot upon the fire, stirring frequently with a wooden spoon until dissolved; then add the carbonate of potash and the chalk, both well powdered; take it off the fire and stir in the arsenious acid; and, lastly, incorporate thoroughly the camphor, in powder, with the rest of the ingredients.

This makes a composition of a consistence of paste. When required for use, dissolve 2 ounces of it in a pint of alcohol, and apply with a brush.

TO PULVERIZE CAMPHOR.

Camphor, from its gummy nature, is not easily powdered in a mortar, but if it be first broken with the pestle, and then sprinkled with a few drops of alcohol, it will pulverize easily. Another plan is to first dissolve the camphor in alcohol; and then, by adding water to the solution, the camphor is precipitated under the form of an impalpable powder of exquisite whiteness, which may be collected and spontaneously dried on a filter; the addition of a minute quantity of carbonate of magnesia to the water (say one drachm for each sixteen ounces of camphor), before mixing it with the camphor solution, will prevent the powdered camphor from hardening again after drying.

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